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ALLEN & HANBURY'S,

Manufacturers of Cod Liver Oil, Malt Extract, and Pharmaceutical Preparations,

Also of MEDICATED and other LOZENGES and IMPROVED JUJUBES,

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NEW YORK: F. J. MACNAUGHTAN, 20 CEDAR STREET, AGENT.

A copy of this Supplement is inserted in every number issued of "THE CHEMIST AND DRUGGIST."



Advertisements for this Supplement must be prepaid, and can be received at the Office, 42 Cannon Street, until **5 p.m.** on **Thursday afternoon**, or by first post on **Friday morning** of each week.

Remittances payable to **EDWARD HALSE**, crossed **MARTIN & CO.** Stamps are taken in payment.

The Terms for Advertisements in this Supplement will be found printed under each heading.

OFFICE: 42 CANNON STREET, LONDON, E.C.

The VALUE of "THE CHEMIST & DRUGGIST."

TESTIMONY BY ADVERTISERS.

We have recently received many expressions of satisfaction from Advertisers, and amongst them is the following note:-

I am most gratified with the results of my advertising in your paper. I consider it by far the better journal for business than any other published. Facts speak for themselves. I find THE CHEMIST AND DRUGGIST mentioned ten times where other of our Trade Journals are once. I cannot allow this opportunity to pass without thanking you for the unremitting attention you have always shown. I must confess I had grave misgivings concerning your alteration from monthly to weekly publication; but, instead of fears, they are a pleasurable knowledge that business has increased wonderfully. (32/22.)

CHEMISTS' TRANSFERS.

MESSRS. ORRIDGE & CO., 32 LUDGATE HILL, E.C., CHEMISTS' TRANSFER AGENTS,

May be consulted at their Offices on matters of SALE, PURCHASE, and VALUATION. Immediate attention given to Foreign Commissions.

The Business conducted by Messrs. ORRIDGE & CO. has been known as a Transfer Agency since the year 1846, and is well known to all the leading firms in the Trade. VENDORS have the advantage of obtaining an opinion on Value derived from extensive experience, and are in most cases enabled to avoid an infinity of trouble by making a selection from a list of applicants for purchase, with the view of submitting confidential particulars to those alone who are most likely to possess business qualifications and adequate means for investment. PURCHASERS who desire early information regarding eligible opportunities for entering business will greatly facilitate their object by describing clearly the class of connection they wish to obtain

Particulars of any of the following will be sent free on application:-

1.—**LONDON, E.**—Ready-money Business of good class for immediate disposal; returns nearly £775; very profitable; large double-fronted shop, well-fitted; good house, greenhouse, garden, &c.; price £630.

2.—**LONDON, S.E.**—First-class Business; very old-established; returns over £800 yearly; net profits £300; shop handsomely fitted; large house, all in good repair; price to be arranged.

3.—**LONDON, N.**—Main road; very old-established good-class Business; returns nearly £800; well-fitted shop and good stock; convenient house; price £700.

4.—**LONDON SUBURB, N.**—Retail and Dispensing Business; established 20 years; returns have been over £700; neglected of late; good house, attractive garden; easy terms to an immediate purchaser; about £350 will be accepted.

5.—**LONDON, S.**—Very old-established concern; returns £700 to £750; situate at a corner; large house; price about £650.

N.B.—NO CHARGE TO PURCHASERS. Other Businesses, Town and Country; particulars free on application. Personal applicants receive Messrs. O. & Co.'s direct attention and advice, where required, free.

VALUATIONS.—TERMS FOR VALUATION ON APPLICATION. APPOINTMENTS BY POST OR WIRE HAVE IMMEDIATE ATTENTION.

ORRIDGE & CO., 32 Ludgate Hill, LONDON, E.C.

**MESSRS. W. H. TAYLOR & CO.,
CHEMISTS' AGENTS & VALUERS,
79 Queen Street, Cheapside, London,**

Are instructed to transfer the following :—

HOME COUNTIES (near London).—A handsomely-fitted Pharmacy; returns about £9 weekly; if properly worked will do more than double; good house, part will readily let off; satisfactory reasons for disposal; price £275, which is about value of fixtures only.

CHESHIRE.—Light Retail Business; turns under management about £320; capable of great development by a resident principal; spacious house; rent £25; very little opposition; good opportunity for Prescribing and Dentistry.

LONDON, W.—Dispensing and Light Retail; average returns about £500; can be greatly increased if conducted on modern principles, the position being an unusually good one; large corner house; rent £80; price £500.

N.B.—200 other Businesses on Register to select from. Particulars free on application.

TO LET.

3s. 6d. for fifty words; 6d. for every 10 words beyond.

TO CHEMISTS, GROCERS, &c.—A very desirable little Chemist's shop, with Grocery, and Off Beer, Wine, and Spirit Licence attached, to let, with good house and all necessary arrangements; easy and small incoming. Walter & Watt, Ashford, Kent.

BUSINESS WANTED.

3s. 6d. for fifty words; 6d. for every 10 words beyond.

FIRST-CLASS Dispensing and Light Retail Business wanted; about £1,000. "Business," Evans, Sons & Co., Hanover Street, Liverpool.

BUSINESSES FOR DISPOSAL.

3s. 6d. for fifty words; 6d. for every 10 words beyond.

All Advertisements should reach the Office,
42 Cannon Street, by 5 p.m. on Thursday
afternoon, or first post on Friday morning
of each week.

ON ACCOUNT of the death of S. T. Sedgwick, Chemist, Bexley Heath, the Stock, Bottles, Fixtures, &c., will be sold for a small sum; the business was carried on by him for 10 years, and before by W. Lacey for 15 years.

ENGLAND COUNTY—Drug Business, with little Grocery, in country village of 1,000 inhabitants; no other chemist within 8 miles and 5 miles; now returning £10 weekly by unqualified man; rent low; stock and fixtures £200 to £300. 116/18, Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

LIGHT Retail and Dispensing, with average returns of £1,000 for 3 years; excellent shop and house in leading position of good Lancashire town; in consequence of vendor wishing to leave at once, valuation of stock and fixtures will be accepted, about £600. This business is thoroughly genuine and will bear strict investigation, and is an exceptional chance of securing a really good business, capable of much increase, below its value. "Veritas," care of Mr. Brett, Valuer, Leicester.

EMPLOYERS WANTING ASSISTANTS.

3s. 6d. for fifty words; 6d. for every 10 words beyond.

A N ENERGETIC, Pushing, Gentlemanly Assistant for a mixed country business; short hour; no Sunday duty; one preferred with knowledge of postal duties or telegraphy; a comfortable home is offered. Enclose photo, A. T. Z., Newbery & Sons, 1 King Edward Street, Newgate Street, London, E.C.

A GRA (INDIA).—Wanted at once, a good Manufacturing Pharmaceutical Chemist; salary first year, 150 rupees per month, second year 175 rupees, third year 200 rupees; free quarters; second-class passage paid out; three years' engagement. Candidates, who must hold undeniable references, and should hold Major qualification, apply, sending photo, to J. Messrs. Evans, Lescher & Webb, 60 Bartholomew Close, E.C.

A SSISTANT wanted for healthy part of India; one having experience in a Mixed Business or General Store preferred. Apply, stating full particulars, to Idris & Co., 3 West Street, Finsbury Circus, E.C.

JUNIOR ASSISTANT; outdoor; accustomed to a good Mixed Country trade; good references essential; a comfortable, permanent situation to a suitable man; state age, height, salary required, and other particulars, enclosing photo. C. Gascoigne, Pharmaceutical Chemist, Kidderminster.

M ANAGER; married; qualified; accustomed to Second-class and Prescribing trade; salary, commission, and residence. W. B., 2 Malvern Road, Kilburn.

D RUGGISTS' SUNDRIES.—Wanted, a Country Traveller. Address, Ayrton & Saunders, 149 Duke St., Liverpool.

D RUG AND GROCERY.—Wanted, a competent Assistant, quick and steady, good address. Apply, stating full particulars, and enclosing carte (to be returned), to George Ayre, Market Place, Thirsk.

FIRST-CLASS ASSISTANT; qualified; married; position demands energy, activity, and judgment, and offers good prospects to a suitable man. Apply, giving full particulars of age, height, experience, salary required, when disengaged, &c., and enclosing carte (to be returned), to Mr. William Day, 11 Bugle Street, Southampton.

A N ASSISTANT, not under 23, of steady business habits, able to Dispense and Prescribe, for a good-class country trade; hours short, and no Sunday duty; salary £80 year; outdoors. Apply, with references, stating age and height, enclosing carte, to C. Wakeham, Helston, Cornwall.

T RAVELLER.—An old established Drug House extending their business are desirous of engaging the services of a gentleman of experience (with a connection) to represent them in Yorkshire and East Lancashire. Address, in first instance, with full particulars, to "Wholesale Druggist," Office of THE CHEMIST AND DRUGGIST, 42 Cannon St., E.C.

ASSISTANTS WANTING SITUATIONS.

1s. for twelve words; 6d. for every six words beyond.

A S CHEMIST'S ASSISTANT, Surgeon's Dispenser, or otherwise; aged 23; experienced in prescribing, dispensing, and extracting teeth. E. S., Hopkinstown, Pontypridd.

A S MANAGER; outdoors; aged 25; prescriber and tooth extractor. "Chemicus," 112 Oxford Street, Leicester.

AS JUNIOR; aged 20; time for study; good references; moderate salary. B., 14 Dale End, Ordnance Place, Chatham.

MANAGER, or Senior Assistant; qualified; 12 years' experience; first-class references; permanency preferred. Burrows, Grantham.

AS SENIOR, Manager, or Assistant in good Dispensing Business, with view to purchase. "Chemist," Evans, Sons & Co., Hanover Street, Liverpool.

AS ASSISTANT, Mixed Business; late with Steward & Son Bridgnorth; Midlands preferred. Alma, Broad Street, Whittlesey, Peterborough.

WHOLESALE.—Experienced Clerk and Warehouseman desires re-engagement. "Luc," Office of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.

ASSISTANT; qualified; aged 26; first-class references. "Delta," 40 Chesterton Road, Cambridge.

AS JUNIOR or Improver; 4 years' experience. Address "Pyro," care of Greenwood, 76 Lozells Road, Aston, Birmingham.

AS ASSISTANT in good-class Dispensing and Retail; qualified; experienced. G. W., 55 Park Road, Ryde, Isle of Wight.

AS ASSISTANT or to Manage Branch; temporary or permanent; can prescribe, extract teeth; good references; aged 32. M. R., 112 Duke Street, Chorlton Road, Manchester.

ASSISTANT; 5 years' experience at Counter and Teeth Extracting; reference. Address, F. B., 5 Halford Street, Leicester.

TEMPORARY; outdoor; Manage Branch; experienced; qualified; married; aged 28; tall. T., 49 Gillespie Road, Highbury, N.

TELEGRAPHIC ADDRESS: "Chemicus London."

TELEPHONE NO. 1852

EXCHANGE COLUMN.

TERMS.

Advertisements in this department must be paid for in advance. From this rule no deviation can be made. Insertions are charged at the rate of $\frac{1}{d}$. per word, provided the advertiser attaches his name and address, for each word of which he must also pay at the same rate; or, if he pays $1d$. per word, his name and address will be registered and a figure attached to his advertisement. All correspondence referring to that figure must be addressed to "The Publisher of THE CHEMIST AND DRUGGIST, 42 Cannon Street, E.C.," and the figure must be distinctly endorsed upon the envelope. Letters will then be forwarded to their proper destination. A price is counted as one word, as e.g., £1 10s. 6d.

NOTICE.—In future no Advertisement will be inserted in this section for less than Sixpence. Minimum price for any announcement, 6d.

DEPOSIT OF MONEY.—In order to ensure safety we offer the following system:—The purchaser of anything advertised in the Exchange Column may remit the amount to us. We acknowledge receipt to both parties by post cards, and only pay the money deposited on the advice of the remitter. Whether returned to him or paid to the seller, we charge a commission of 6d. on any transaction of £3 or less, or 1s. if above that amount.

Remittances payable to EDWARD HALSE, at the G.P.O., London, and crossed MARTIN & CO.

FOR DISPOSAL.

NOTICE.—In future no Advertisement will be inserted in this section for less than Sixpence. Minimum price for any announcement, 6d.

Dental.

Vulcanizer, gun-metal, centre-screw, with Garrett's gas-regulator. Waddington, Dentist, Thornton.

Optical.

Very good opera glass, 21x., or would exchange for latest edition "Gray's Supplement to the Pharmacopoeia," by Redwood. Kendall, 1 Holywell Hill, St. Albans.

Proprietary Articles.

Fifteen 2s. 9d. Liebig's Beef Wine, at 1s. 116/26.

Patents; write for list. Hardman, Chemist, Burley Road, Leeds.

One doz. hop bitters, 30s., carriage paid. Lakenham, Chemist, Melksham.

Savory & Moore's Pancreatic Emulsion, and other specialities of Savory & Moore, cheap. Send for list and price to Harvey, Margate.

Pond's extract, 1s. 1 $\frac{1}{2}$ d.; Rooke's cod-liver oil, 2s. 6d.; cirocine, 4s. 6d.; pneumodyne green, 4s. 6d.; one of each; 5s. 6d. for all. James Acheson, The Pharmacy, Ballymena.

Educational.

"Cassell's Family Physician" (unbound), "Qualitative Analysis" (Beilstein), "Mineralogy" (Collins), cheap; what offers? Bainton, Stafford Street, Walsall.

A good edition of Shakespeare, with 40 steel engravings and biographical sketch; good condition; small print; price 5s 6d., post free. R. E. Hardy, 3 Catharine Street, Salisbury.

"Notes on Dispensing," for Minor students, including hints on the manipulation of mixtures, pills, emulsions, suppositories, &c. Special notes on difficult pills and excipients, alphabetically arranged. Post free 13 stamps. John Gower, 47 Sigdon Road, Hackney, London.

Set of illegible autograph prescriptions (original) 2s. 6d., as presented to the Pharmaceutical Society of Ireland for their examinations; 30 prescriptions (catch and difficult) given to dispense at Minor during past 12 months, 2s.; 50 questions asked of successful students at last Minor, 1s. 1d.; new "Pharmacopeia," 5s.; lot of cheap, almost new, books; Attfield's "Chemistry," 1886, 12s.; Squire's "Companion," 1886, 8s. 6d.; carriage paid; stamp for list. Saunders, Medical Tutor, 6 Rochester Square, N.W.

Minor books.—Ganot's "Physijs," Wills' "Pharmacy." Attfield's and Roscoe's "Chemistry," Browne's "Botany," "Art of Dispensing," only one, unsoiled; Whitla's "Pbarmacy," "Selecta Prescriptis," Wills' "Botany," Gray's "Operative Chemist," steel plates, rare; "Postal Lectures," copied, 20s.; "Oral Lectures," 15s., on B.P. chemicals, pharmacy, botany, dispensing, with equations, giving the "square" questions thereon and answers; Squire's "Companion" (11th edition), perfectly clean; Colenso's "Arithmetic," Beasley's "Prescriptions." What offers? Unanswered three days, declined. "Chemist," 295 Romford Road, Upton, E.

Literature.

Pharmaceutical Journal, posted Mondays, for other periodical, or cash offers. Holmes, Brill.

Apparatus.

Electric.—Glass cylinder electric machine, brass fittings, gives inch spark, quite new, discharger, Leyden jar, gold leaf electroscope, glass rod for exciting, sundry other items; Grove's battery, 4 cells, zinc p'tes and platinum complete, all in tray, guaranteed working. Will exchange for Lancaster's "Meritoire" ½-plate camera and stand, or cash offers. Bond, Winchmore Hill, London.

Soda-water Machinery.

Engine, boiler, soda-water machine, generator gasometer, filling machines for cork and patent bottles; good working order; price 55s. Hill, Chemist, Cheltenham.

For sale cheap, or exchange, a six-bottle Macdonnell's filling-machine, with all extra parts complete, for bottling aerated waters; can be seen at work at any time. Carter & Co., Soda-water Works, Bristol.

Shop Fittings.

12 ft. wall-fixture, drawers, lockers, shelving, cupboards, and cornice, 8s. 10s.; 16 ft. wall-fixture (mahogany), silvered plate-glass cupboards between shelving, glass labels and glass knobs to drawers, 12s. 10s.; several others equally cheap; 9 ft. wall-case, as fig. A 88, but, instead of being bent-glass cases, between top and bottom cases there are sloping cases, 14s.; 5 ft. wall case, as A 87, glass cupboards under, 8s.; 10 ft. ditto, ditto, 15s.; 15 ft. ditto, ditto, 18s.; 12 ft. ebonised wall case, 8 ft. high, 9s. 10s.; 7 ft. wall-case, ebonised, 8 ft. high, 7s.; a number solid mahogany-top counters, framed and moulded, pine stained and polished fronts, from 5 ft. to 12 ft. long, at 6s. per ft. run; also a number of black and gold fronted counters with mahogany tops, at 6s. per ft. run; 12 ft. mahogany counter, 7s. 10s.; plate-glass fronted counter, 9s. 10s. E. Natali, 207 Old Street, E.C.

16-inch marble mortar, 10s.; large bell-metal mortar at 5d. lb.; perfume stand, 3 rows, with mirror backs, 20s. Floyd, Bury St. Edmunds.

Shop rounds, labelled, 2 dozen 32-oz. N.M. and 1 dozen W.M. at 6d. each; 7 dozen 20-oz. N.M. and 3 dozen W.M. at 5d. each; 3 dozen 4-oz. N.M. and 3 dozen W.M. at 3d. each; three 4-gallon pear-shaped carboys, hollow stoppers, at 6s. each; 1 dozen 4 lb. lilac-covered pots at 9d. each; 2 window enclosures at 12s. 6d. each. Kitson, Chemist, Worcester.

A number of flat glass cases, various sizes, from 2 ft. 6 in. to 6 ft. long, as fig. 2, to open at back, also some to open at top, to be sold very cheap, to make room, also a number as fig. 3; 2 ft. long, 30s.; 2 ft. 6 in. long, 32s.; 2 ft. 8 in. long, 35s.; 3 ft. long, 40s.; 3 ft. 6 in. long, 45s.; as fig. A 8, 5 ft. long, 95s., 6 ft. long, 5s. 10s.; as fig. A 15, 9 ft. long 8f., 5 ft. 6 in. long, 4s. 10s.; as fig. A 16, 3 ft. long, 55s., 3 ft. 6 in. long, 60s., 3 ft. 9 in. long, 65s., 4 ft. long, 70s.; as fig. A 17, 4 ft. long, 75s.; as fig. A 18, 5 ft. long, 5s. 6 ft. long, 5s. 10s.; a splendid plate-glass counter-case, 7 ft. 8 in. long, 23 in. wide, 12 in. high, glass ends, silvered-glass back, to open, 7s. 10s.—a great bargain; toothbrush-cases, as fig. A 9, 35s., as fig. A 10, 50s.; 6 ft. case, to open in front, plate-glass and mahogany stand, 8s.; a silvered plate-glass, in ebonised frame, 7 ft. by 2 ft. 9 in., 7s.; a ditto, ditto, 7 ft. by 2 ft. 6 in., 3s. 5s. E. Natali, 207 Old Street, E.C.

Plate-glass sponge-cise, fig. A 41, 65s.; ditto, ditto, as fig. A 43, 95s.; show-steps, A 37, 50s., as fig. A 39, 15s.; desk and glass case, A 31, 60s.; a ditto, ditto, 50s.; a number of dispensing screens, from 5 ft. to 8 ft. long, glass case at each side, with silvered plate glass in centre and marble slab in front, tablets on top of cases, and shelves at back for dispensing bottles, very elaborate, from 6s. 10s.; a 3 ft. ditto, as fig. 54, 45s.; 3 ft. 6 in. ditto, 55s.; 4 ft. ditto, 60s.; 4 ft. 10 in. ditto, 70s.; 5 ft., as fig. A 55, 95s.; 6 ft., 5s. 10s.; 6 ft. 6 in., 6s.; 7 ft. ditto, 6s. 10s.; and a quantity of other screens very cheap; several pair specie jars equal to new, Royal Arms, &c., &c., on mahogany stands, from 24 in. to 40 in. high, price 4s. to 6s. 10s. Several pairs carboys, 10, 12, 14, and 16 gals., with mahogany stands, and a number of smaller sizes; dome-covered pink ointment jars, gold labelled, any names, 3s. 9d. each; a lot of second-hand green, blue, 3 and 4 lb. ditto; a ½ gal. displacement apparatus, fig. 53; black store bottles, 1 gal., with japanned caps, 1s. 3d. each. E. Natali, 207 Old Street, Loudon, E.C.

Formulae.

Reliable Recipes.—Cough balsam, lime and, glycerine, rheumatic liniment, neuralgic tincture, cure unbroken chilblains, bronchial linctus 6d. each; 6 for 2s. 6d. "Chemist," Edwards, Wye.

Set of 12 to 15 practical receipts for treatment of gonorrhœa, gleet, syphilis, secondaries, and every variety of venereal disease, with full instruction for diagnosis, 3s. 6d.; consumption mixture, very successful, 1s. 6d. A. Johnson, 64 Furness Hill, Sheffield.

Recipes to be disposed of for making show colours for carbys for windows; permanently brilliant and splendid colours, much admired by those who have prepared them from recipes. Also for disposal recipe for making ginger cordial, an excellent one the cordial has a good sale during winter. J. H. Holmes, Colwyn, N. Wales.

Please note this!!!—Seasonable proprietaries; make your own from Brooks's Formulae, warranted elegant and excellent—"Influenza Mixture," acts like magic, pleasant and safe; "Glycerine Cream" (like Beetham's), rapidly cures blapped hands frost-bites, &c., rendering skin like velvet; "Hop Tonic," better than any other, can be made instanter, costs 1s. lb.; "Canadian Cone," certain cure for chilblains, sweet and cleanly; "Bronchelixir," rapidly gives relief in bronchitis and chest affections, wonderful remedy; "Cough Linctus" (Glycerine), gives instant ease, and cures rapidly, pleasant taste, good proprietary; "The Jubilee Sauce," universally liked most luscious, renders cold meat a luxury, differs from any other, costs under 6d. a pint; recipes 1s. 1d. each, 3 for 2s. 6d. Special offer. Cut this out and above will be sent (as sample) for 5s.; list free. Tom Brooks, Chemist, Louth.

Soluble essences (non-alcoholic, for mineral waters); lime-juice cordial; chlorodyne (perfectly transparent); cascara sagrada cordial; concentrated waters (1 to 40); essence rennet (permaneut, no salt); hop bitters; liquor carbonis (resembles Wright's); chemical liquors for syrups (stable); lac rosarium (inseparable, made in few minutes); ink (resembles "Dichroic"); elixir phosphori, invigorating tonic; sponges bleached (golden yellow); liquid deutifrice (like "Florilene"); marking-ink, *sine* silver, writing executed defecit chemicals; saline (Eno's or Lamplough's); magic neuralgic drops; lime-juice and glycerine (white as milk, inseparable); pill-coating, pearl white, no mastic or masticate; crimson marking-ink; hair-restorer, colourless, no deposit, *sine* silver; oleum flavidum concentratum, stable colour for pomades; soluble ginger (like Hay's); liquor copaiba comp. c. buchu et matricaria (like Richardson's); liquor santal. flav. (resembles Hewlett's); taraxicum podophylin, iron quinine (both resemble Pepper's); many perfumes, also toilet requisites; state wauts; lists issued; all inexpensive to prepare; 5s. each (5 for 1s.); analyses undertaken. Readers are warned against cheap substitutes. I was first to advertise formulae in this journal. "Analyst," Mr. Warues, 6 Rochester Square, N.W. (Only prepaid inquiries answered.)

Miscellaneous.

500 genuine cigars, splendid condition, what offers for lot or part? Samples (4) P.O. 1s. "Druggist," 1 Philpot Lane, London, E.C.

WANTED.

Six-gal. carboy, with or without plain stopper. Sbilcock & Son, Bromley, Kent.

Dental chair; state lowest price. "Dental," 1A Denbigh Road, Notting Hill, W.

Large cheap aquarium, glass sides. Slack, Chemist, Prescot.

Gerrard's "Materia Medica," good condition last edition, cash price. Saunders, Chemist Walthamstow.

Address Wanted.

Mr. Centreton (druggists' sundriesman), late of 24 Nile Street, City Road, E.C. 40/40.

E. CHEESEMAN—J. HOLDSWORTH,

TRADING AS

OSBORNE, BAUER & CHEESEMAN,



Perfumers to the Queen,

19 GOLDEN SQUARE, REGENT STREET, LONDON, W.,

MANUFACTURERS OF

THE BEST PERFUMERY

IN ALL ITS BRANCHES,
AND OF

PURE REFINED SOAPS

SUBJECT TO USUAL DISCOUNT.

REFINED PERFUMED TOILET SOAPS, *all kinds.*

IMPROVED QUALITY, TABLETS, <i>any size</i>	...	...	...	...	...	...	84/- per cwt.
" Bars and Half Bars	...	...	...	...	...	...	80/- "
FAMILY " TABLETS, <i>any size</i>	...	...	...	...	...	...	64/- "
" Bars and Half Bars	...	...	...	...	...	...	60/- "

OLD BROWN WINDSOR.

OLD BLACK WINDSOR.

IMPROVED BROWN WINDSOR.

"CARBOLIC ACID AND TAR SOAP."

"COSMETIC PETROLINE SOAP."

"COSMETIC PETROLINE SOAP" (*Unscented*).

JUNIPER TAR OIL SOAP.

"MARLBOROUGH SOAP."

"PETROLEUM OR DISPENSARY SOAP."

PURE OATMEAL SOAP.

SULPHUR SOAP.

&c., &c., &c.

MEDICATED SOAPS of all descriptions.

SOLE PROPRIETORS OF THE FOLLOWING SPECIALITIES—

"BABY'S SOAP." (*The Original Registered Title.*) Specially prepared for Children or Adults with tender skin.

"BAUER'S HEAD (and BATH) SOAP," (*Registered Title.*) Cleanses, Strengthens, and Promotes the Growth of the HAIR. A Luxury for BATH and TOILET. An excellent SHAVING SOAP.

"GLYCERINE AND HONEY JELLY." (*Registered Title.*) For allaying Irritation caused by HEAT, and ROUGHNESS occasioned by COLD WINDS.

"THE INCOMPARABLE SMELLING SALTS,"

LATELY STYLED "INEXHAUSTIBLE,"

AS SUPPLIED TO THE QUEEN.

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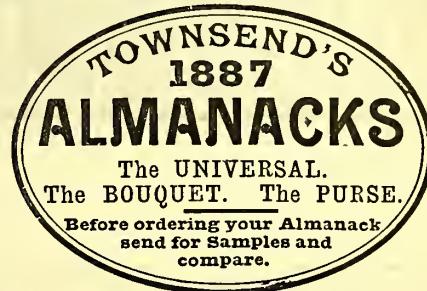
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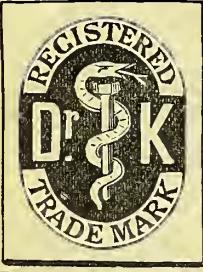
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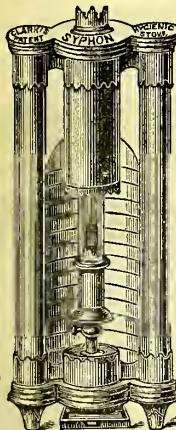
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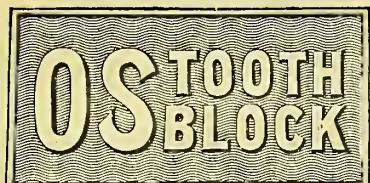
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JEWSBURY & BROWN'S ORIENTAL TOOTH PASTE

This old-established and increasingly favourite Dentifrice has been over Sixty Years before the Public. It is warranted to retain its properties and keep in good condition in any climate. The original and only genuine is manufactured solely by



JEWSBURY & BROWN, Chemists, MANCHESTER,

and is distinguishable by the Trade Mark, printed in red and green, a facsimile of which is annexed. Particular attention should be paid to this guarantee of genuineness, as numerous imitations are offered. Sold universally by Chemists and Perfumers, at 1s. 6d. and 2s. 6d.

The Trade and Shippers supplied by the leading houses in London and elsewhere. Bills and Show Cards forwarded on receipt of address cards and directions for enclosure.

WALNUT POMADE.



A Triumph as a Hair Darkener.
Easy to Apply.
Easy to Remove.
Once Commenced—always Used.

As a simple, effective, pleasant, and nourishing preparation it can be conscientiously recommended to a customer whose hair is becoming grey, red, or white.

Three Colours—Light Brown, Dark Brown, and Black.

Pots— $\frac{1}{2}$ oz. (16) 12/- per doz.

$1\frac{1}{2}$ oz. (26) 20/- per doz.

Agents—Barclay & Sons, Edwards & Co., Maw, Son Thompson, and Sanger & Sons.

Sole Manufacturer & Proprietor—

EUGENE MORPHY,
70 South Audley St., Mayfair,
LONDON.

Matthews's
Fullers 6d. & 1s.
Earth.

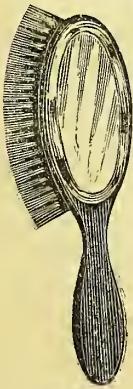
Used in
the Royal
Nurseries,
and highly
recom-
mended by the Faculty; it
protects the Skin from cold
winds, chaps, &c., and pre-
serves the Complexion.

SOLD BY ALL THE WHOLESALE HOUSES.
ROUSE & CO., 12 WIGMORE STREET, LONDON.

DUKAS & CO.,
WHOLESALE

20 RED LION SQUARE,
HOLBORN,

LONDON, W.C.,



ALL ORDERS
EXECUTED
ON RECEIPT.



NO TRAVELLERS,
NO AGENTS.

BRUSH MANUFACTURERS.

Employ over 1,000 hands, and supply their Brushes more than 25 per cent. Cheaper than any English Brush Makers, and guarantee the quality cannot be surpassed. Stock is kept in London of several Thousand Patterns, from the

Cheapest to the very Finest Quality.

SAMPLES ON APPLICATION.



THE BEST PARAFFINUM MOLLE, B.P., IN THE MARKET IS

"PETROLINA."

PURE, SWEET, NEUTRAL, NON-OXIDISABLE, UNCHANGEABLE.

Determined to give every possible inducement to the Consumer, the BINGHAMTON OIL REFINING CO. have authorised

A STILL FURTHER REDUCTION IN PRICES.

So that Petrolina is now as cheap as any of the inferior jellies.
Packed in oak kegs of 112 lbs., 56 lbs., and 28 lbs.; also tins of 14 lbs., 5 lbs., and 1 lb.; and in casks of 2 cwt. and 3 cwt.

SAMPLES AND PRICE LISTS FREE ON APPLICATION TO

E. A. DE PASS & CO., SOLE AGENTS, 3 COLEMAN STREET, LONDON, E.C.

B. NOAKES & CO.,

MANUFACTURERS OF

Metallic Casks, Drums, & Kegs

ENAMELLED, PLAIN, AND DECORATED

TIN CANISTERS AND BOXES,

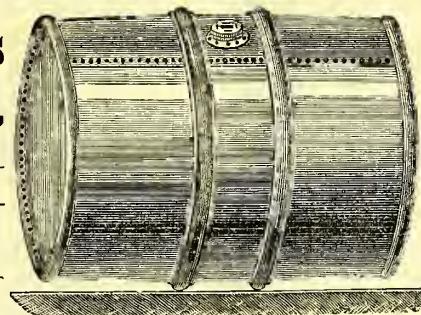
FOR PACKING CHEMISTS' AND DRUGGISTS' SUNDRIES.

ENAMELLED SHOW CARDS.

IRON BARRELS,
CAPACITY 40 TO 120 GALLONS
AS PER ILLUSTRATION.

Cable and Telegraphic Address—

"NOAKES LONDON."



These large Iron Casks, similar to sketch, can be handled with equal facility to wooden barrels, and, owing to their strength and durability, can be used over and over again for an indefinite period. They are perfectly liquid tight, being tested at a very high air pressure, and, unlike wood, do not absorb any of the contents. They are all fitted with interchangeable screw bungs, and can also be fitted with screw plug in head, for draw-off tap.

They are specially adapted for all kinds of Chemical Products, Sulphuric Acid, Glycerine, Spirits, Oils, Turpentine, Petroleum, Benzoline, Varnishes, Tar, Naphtha, Mineral Extracts, and Inflammable Liquids of every description.

We are making them in three qualities, "Black Iron," "Lead Coated," and "Tinned."

PRICE LIST ON APPLICATION.

Offices and Works: 142 SPA ROAD, BERMONDSEY, LONDON, S.E.

METHYLATED SPIRIT & FINISH

Supplied of the best quality in wholesale quantities by

J. & W. HARVEY & CO., Distillers, Yoker, GLASGOW.

LONDON AGENTS—JAMES CHAMBERS & CO., 23 BIRCHIN LANE, CORNHILL, E.C.

BURROUGH'S
Spiritus Rectificatus, P.B.
SPIRITS OF WINE

5 gallons 56 o.p. at
19 1/4 Cash.
The BEST English Grain Spirit,
Free from Fuel Oil,
Chemically Pure.
Special Quotation for Quantities.

ORANGE WINE,
MEDICINAL SHERRY.
At LOWEST PRICES.
JAMES BURROUGH,
LONDON, S.W.

J. & T. SEDDON,

MANUFACTURERS OF

CYLINDER, ENGINE, AND MACHINERY OILS AND GREASES, PAINTS, COLORS, VARNISHES, ETC.

Oil Boilers, Refiners, and Importers. Works—Oxford Street, HULL.

SPECIALTIES—Sweet Bloomless Mineral, Machinery, Animal, Fish, Vegetable, Wool, Axe, Harness, Curriers, and Patent (quick drying) Pale Boiled Linseed Oil. BEST BROWN YORKSHIRE, YELLOW LOCOMOTIVE, Contractors, Colliery Mill, and Shale GREASES.

METAL POLISHING PASTE.

Guaranteed Superior Quality.

TRADE MARK—"GLOBE."

Put up for Retailing in 1d., 2d., and 3d. Boxes, and in bulk, packed in Casks. Apply to

FRITZ SCHULZ, JUN., LEIPZIG, GERMANY.

THE LARGEST AND MOST RELIABLE MANUFACTURER OF METAL POLISHING PASTE. [1]



MAY, ROBERTS & CO.,

9 CLERKENWELL ROAD, LONDON, E.C.

TELEGRAPHIC ADDRESS—"FEEDING BOTTLES LONDON."

CATALOGUE OF DRUGGISTS' SUNDRIES AND PATENT MEDICINES OUT OF PRINT AT PRESENT.

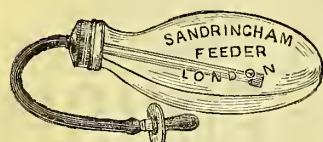
CARRIAGE ON SUNDRIES.—Since 1877 we have allowed 5 per cent. discount on orders for £5 worth of "SUNDRIES" in lieu of Carriage. By this arrangement our Friends are enabled to have enclosures sent with our goods, which they were unable to do when we paid Carriage.

NO TRAVELLERS EMPLOYED — BUYERS ARE THEREFORE SPARED THEIR EXPENSES.
COMPARE OUR PRICES.

REDUCED PRICES FOR FEEDING BOTTLES.



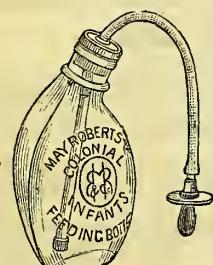
"Sandringham." Earthenware Tops.



"Sandringham." Metal Screw Caps.



"Sandringham." Screw Glass Stoppers.



"Colonial." Earthenware or Wood Tops.

Sandringham (1s.) — WHITE, Earthenware Tops—

With White Fittings, each in s. d. box, two brushes ..per doz.	6 0
With Black Fittings, each in box, two brushes ..per doz.	6 6
Spare White Fittings , "	3 4
Spare Black Fittings , "	3 10
Spare Bottles	1 9

Sandringham (1s.) — WHITE, Screw Glass Stoppers—

With White Fittings, each in s. d. box, two brushes ..per doz.	6 0
With Black Fittings, each in box, two brushes ..per doz.	6 6
Spare White Fittings , "	3 4
Spare Black Fittings , "	3 10
Spare Bottles	2 0

Sandringham (1s.) — WHITE, Screw Metal Caps, Nickel plated—

With White Fittings, each in s. d. box, two brushes ..per doz.	7 0
With Black Fittings, each in box, two brushes ..per doz.	7 6
Spare White Fittings , "	4 0
Spare Black Fittings , "	4 6
Spare Bottles	2 0

Sandringham (2s.) — WHITE, Gilt Porcelain Tops—

With Black Fittings and Spare Glass Tube, Shield and Teat, each in box, two brushes ..	s. d.
.....per doz.	11 6
Spare Black Fittings , "	5 6
Spare Bottles	2 0

Sandringham (3s.) — WHITE, Gilt Porcelain Tops and Cut Glass Stopper—

With two sets of Brown Fittings, each in box, two s. d. brushes ..	per doz.
19 0	
Spare Brown Fittings , "	7 3
Spare Bottles	7 3

Colonial (6d.) — GREEN, Boxwood or Earthenware Tops—

With White Fittings, each in s. d. box ..	2 10
With Black Fittings, each in box ..	3 1
With White Fittings, 1 dozen in box ..	2 4
With Black Fittings, 1 dozen in box ..	2 7
If with White instead of Green Bottles ..per doz. 2d. extra	

Colonial (6d.) — GREEN, Screw Glass Stoppers—

With White Fittings, each in s. d. box ..	3 6
With Black Fittings, each in box ..	3 9
With White Fittings, 1 dozen in box ..	3 0
With Black Fittings, 1 dozen in box ..	3 3
Spare White Fittings , "	1 6

Colonial (6d.) — GREEN, Screw Glass Stopper—

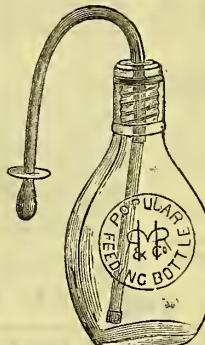
With White Fittings, each in s. d. box ..	3 6
With Black Fittings, each in box ..	3 9
With White Fittings, 1 dozen in box ..	3 0
With Black Fittings, 1 dozen in box ..	3 3
Spare White Fittings , "	1 2

Colonial (1s.) — WHITE, Earthenware Tops—

With White Fittings, each in s. d. box, two brushes ..per doz.	4 6
With Black Fittings, each in box, two brushes ..per doz.	5 0
Spare White Fittings , "	2 6
Spare Black Fittings , "	3 0
Spare Bottles	1 2

Colonial (1s.) — WHITE, Screw Glass Stoppers—

With White Fittings, each in s. d. box, two brushes ..per doz.	4 6
With Black Fittings, each in box, two brushes ..per doz.	5 0
Spare White Fittings , "	2 6
Spare Black Fittings , "	3 0
Spare Bottles	1 2



"Popular." Screw Glass Stoppers.

Popular (6d.) — GREEN, Boxwood or Earthenware Tops—

With White Fittings, each in s. d. box ..	2 10
With Black Fittings, each in box ..	3 1
With White Fittings, 1 dozen in box ..	2 4
With Black Fittings, 1 dozen in box ..	2 7
If with White instead of Green Bottles ..per doz. 2d. extra	

Popular (6d.) — GREEN, Screw Glass Stoppers—

With White Fittings, each in s. d. box ..	3 6
With Black Fittings, each in box ..	3 9
With White Fittings, 1 dozen in box ..	3 0
With Black Fittings, 1 dozen in box ..	3 3
Spare White Fittings , "	1 6

Popular (1s.) — WHITE, Screw Glass Stoppers—

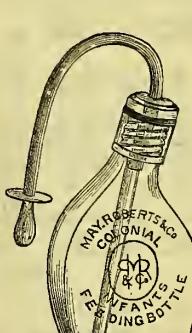
With White Fittings, each in s. d. box, two brushes ..per doz.	4 6
With Black Fittings, each in box, two brushes ..per doz.	5 0
Spare White Fittings , "	2 6
Spare Black Fittings , "	3 0
Spare Bottles	1 2

Colonial (1s.) — WHITE, Earthenware Tops—

With White Fittings, each in s. d. box, two brushes ..per doz.	4 6
With Black Fittings, each in box, two brushes ..per doz.	5 0
Spare White Fittings , "	2 6
Spare Black Fittings , "	3 0
Spare Bottles	1 2

Colonial (1s.) — WHITE, Screw Glass Stoppers—

With White Fittings, each in s. d. box, two brushes ..per doz.	4 6
With Black Fittings, each in box, two brushes ..per doz.	5 0
Spare White Fittings , "	2 6
Spare Black Fittings , "	3 0
Spare Bottles	1 2



"Colonial." Earthenware or Wood Tops.



"Colonial." Screw Glass Stopper.

SUPPLEMENT TO "THE CHEMIST AND DRUGGIST."

SATURDAY, JAN. 1, 1887.

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Telephone Number,
1852.

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CHEMICUS
LONDON.

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This arrangement is necessary in order to meet the requirements of the Post Office.**

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CLASSIFIED LIST OF ALL ADVERTISERS

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Chemists' Aerated Waters Association
Durrant, Geo. & CO.
Ellis (Ruthin)
Gallais, E. (Min.)
Hassall and CO. (Citric Acid, Phospho)
Hay, W. (Hop Ale Essence)
Hunyadi Janos
Irvine, CO.
Ingram and Royle (Mineral and Vichy) Sauerbrunnen
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Kinmond
Meadowcroft, W.
Mill and CO. (Bourne)
Montserrat
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Vick's Thermometer
Williamson, W.H. (Wntr Drnk)
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Barnet and Foster
Bratty and Hinchliffe
Bush, W. J., and CO. (Foam Producer, &c.)
Favarger, H.
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Meadowcroft, W.
Tyler, Hayward, and CO.
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ACETIC ACID

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Hirst, B-ches, and Hirst
Lindsey and CO.
Morris and Callard (Salts)

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Howard and Sons (Cinchona)

Smith, T. and H.

AMMONIA

May and Baker

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AGENCIES ABROAD

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Eisner and Mendelson (Philadelphia)

Evans, Sons and Mason (Canada)

Feitton (Melbourne)

Frigg (New York)

Hongkong Ruttonjee (Bmby)

Kempthorne (N.Zealand)

Lennon (Port Elizabeth)

MacNaughtan (New York)

Msyhew, E. (Wstn. Australia)

Phillips and CO. (Bombay)

Frosser, E., and CO. (Sdny)

Roberts (Paris, &c.)

Rocke (Melbourne)

Sharland & CO. (Auckland N.Z.)

Shirreffs and CO. (Allahabad)

Stallman and Fulton

Symes and CO. (Simla)

ALMANACKS

Bowers Bros.
Ford, Shapland and CO.
Kay Bros.
Silverlock, H.
Townsend, J.

BANK

Birkbeck Bank

BATHS

May Roberts (Water)

BEESWAX & HONEY

Bowdlear and CO.
Kemp, W., and CO.
Woolley, Sons and CO.

BENZENE, &c.

Sanger and Sons

BICARB. SODA

Gaskell, Deacon and CO.

Howards and Sons

May and Baker

BISMUTH PREP.

Ilewitt and Sons

Howards and Sons

May and Baker

Sellers, J.

BLACKING

New Military Blacking Company
Jameson and CO.

BOOKS

Churchill, A. and J.

Coffin, Dr.

Whittle, W. M.D.

BOTANIC BEER

Newball and Mason

BOTTLE CAPS

Hunt, W. F., and CO.

BOTTLES

Barnett and Foster

Bratty and Hinchliffe

Brooks, Peel (Perfumers')

Glasgow A pothecaries' Co.

Hearn, Riddle and CO.

Isaacs and CO.

Kilner Bros.

Lang, Jonas and Jules

Lynch and CO. ("L" Brand)

Morrison, R., and CO.

Poths

Thompson, Millard and CO. (Feeding)

Toogood

Vallett

BOXES

Austin and Co. (Cardboard)
Ayrton and Saunders (Willow)
Brehmer, Aug. (Cardboard
Folding)
Metz, Paul (Pine and Willow)
Self-Opening Tin Box Co.

BROMIDIA

Battle and Co.

BRONCHITIS**KETTLE.**

Sanger and Sons

BRUSHES

Dukas and Co.
Newberry and Sons

BUTTER COLOUR,
&c.

Bush, W., and Son (Mari-
goldine)
Meyer and Henckel

CAMPHOR

Howards and Sons
Keene and Ashwell (Homeo-
pathic)
May and Baker

Murray, Sir James (Fluid)

CAPSULES

Betts and Co. (Metallic)
Denoual, J. (Medicinal)
Hooper, B., and Co.
Metz ("Acme" Brand)

CARMINE

Bush, W. J., and Co.

Sellers

CASTOR OIL

Allen and Hanburys

CEMENT

Foulkes

Key (Cauline)

CHALK PRECIP.

Dunn and Co.
Levermore, Aug. and Co.

CHEMICALS

Bernstein Vogt (Fine)
Bramwell, E., and Son
Brunner, Mond and Co.
Bush, W., and Co.
Dunn and Co.
Fletcher, Fletcher & Stevenson
Gaskell, Deacon and Co. (Bi-
carbonate of Soda)
Howards and Sons (Pharma-
ceuticals)
Liodice, C. R., and Co.
May and Baker
Morris, Calland, and Co.
Petri Bros.
Sommer, R., and Co.
Smith, T. and H.
Tyke and King
Walker, Troke and Co.
Wink, J. A., and Co. (Fine)
Zimmermann, A. and M.

CHEST PROTECTORS

Barn, Sons and Co.
Haworth, J. H.
Newberry and Son
Thompson, Millard & Co.
Toogood, W.

CHLORODYNE

Blyton-Bage and Co. (Twem-
low's)
Davennor (Brownie's)
Towle, A. P.

CHLOROFORM, &c.

Duncan, Flockhart
Macfarlan, J. F.
Petri Bros.
Smith, T. and H.
Wink, J. A., and Co. (Lim.
Zimmermann)

CHRISTMAS

Cubley and Preston (Sparkling
Frost)

CITRIC ACID

Hassall (Phospho)

COCAINE

HYDROCHLOR.
Howards and Sons

COCOA & CHOCOLATE

Cadbury
Fry (Malted)
Richards, J. M. (Delacre's)

COD-LIVER OIL

Allen and Hanburys
Burroughs, Wellcome
Burgoyne (Pepteline)
Hertz & Collingwood
Smith, T. J.
Southall Bros. and Barclay
Woolley, Sons and Co.

COFFEE

George and Welch (Dandelion)

COLLAPSIBLE**TUBES**

Brooks, H., Peel and Co.

COMP. POWDER

Raines and Co. (Essence of)

CMPSRD MDCH'S EXTRACT, MEAT

Allen and Hanbury's
Burroughs, Wellcome and Co
Hooper, B., and Co.
Leo's Tablets
Newberry and Sons

CORN CURES

Robinson, B.

Young's

COTTON WOOL

Robinson and Sons (Absorbent)

Sanger, J., and Sons

DENTIFRICES

Beddard, J.

Jewsbury and Brown

Martin, J. W. (Rozalinn)

Newberry and Sons

Rimmel

Sutton, O., and Co.

Thompson and Capper

Woods, W. (Areca Nut)

GENTISTRY

Jones, Dr. C. H. (Mechanical)

DISINFECTANTS

Government Sanitary Co.

Harris and Co. (Hydrolyne)

Miloe, Sons & Macie (Disin-
fectant Cover)

National Chemical Co.

Rimmel

Sanitas

Steele & Co. (Chloride of Lime)

DOG MEDICINES

Spratts (Patent)

DRESSINGS, SURG.

[See SURGICAL.]

DRUMS, CANS, &c.

Noakes and Co.

DRUGGISTS' SUN.

Ayrton and Saunders

Bourne, Johnson

Evans, Lecher, and Webb

Hawkins' Counter Adjuncts

Evans, Son (Savars)

Lynch and Co.

Maud, W. R.

Maw, S., Son and Thompson

May, Roberts and Co.

Newberry, F., and Sons

Pattison, Geo.

Sanger and Sons

Savars

Schutze and Co.

Thompson, Millard

Toogood

DUBBIN

Dale, J. T.

Jameson and Co.

New Military Blacking Co.

DYES

Ayrton and Sanderson

Cravens, E. and Co.

EAU DE COLOGNE

Farina, J. M. (Gegenther)

ELECTRIC APPAR.

Darton, F., and Co.

Orme and Co.

Colthurst & Harding (Electric
Light Oil)

EMBROCATION

Elliman, Sons and Co.

ENEMAS

Ingram and Son

Lynch and Co.

GRAVVERS

Barker, W., and Son

**ESSENCES, FRUIT
AND SOLUBLE**

Brathy and Hincliffe

Burgoyne, Burbidges and Co.

Bush, W. J., and Co.

Carter, H. W., and Co.

Hay's Soluble Lemon, &c.

May and Baker

Meadowcroft, W.

Summer and Howell

Thompson, H. A., and Son

Vogt, G.

Woolley, Sons and Co.

ESSENTIAL OILS

Bernstein and Vogt

Bush, W. J. (Lemons, &c.)

Cocking (Japan Peppermt.)

Felton (Eucalyptus)

Hay, W.

Lambert, S. and Co.

May and Baker

McCollum, W.

Rock (Tompatt) (Eucalyptus)

Summer and Co.

Stallman and Fulton

Fymes (Ol. Lavender)

Tyke and King

Vogt, G.

Warrick Brothers

Wright, Layman and Umney

ETHER

Duncan, Flockhart and Co.

Fry (Malted)

Richards, J. M. (Delacre's)

COD-LIVER OIL

Allen and Hanburys

Burroughs, Wellcome

Burgoyne (Pepteline)

Hertz & Collingwood

Smith, T. J.

Southall Bros. and Barclay

Woolley, Sons and Co.

COFFEE

George and Welch (Dandelion)

COLLAPSIBLE**TUBES**

Brooks, H., Peel and Co.

COMP. POWDER

Raines and Co. (Essence of)

COKE

George and Welch (Dandelion)

COLLAPSIBLE**TUBES**

Brooks, H., Peel and Co.

COMP. POWDER

Raines and Co. (Essence of)

COMPO. POWDER

Raines and Co. (Essence of)

COPPER

Briggs, D. (Copper)

Evans, Son and Co.

May and Baker

Robbins

COPPER

Brown, W.

Evans, Son and Co.

May and Baker

Robbins

COPPER

Brown, W.

Evans, Son and Co.

May and Baker

Robbins

COPPER

Brown, W.

Evans, Son and Co.

May and Baker

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May and Baker

Robbins

COPPER

Brown, W.

Evans, Son and Co.

May and Baker

Robbins

COPPER

Brown, W.</

**PERFUMERY,
FANCY SOAPS.**

[See *EAT DE COLOGNE*.]
 Barclay and Sons
 Boehm Gustav (Varlons)
 Bredenbach and Co.
 Chesebrough Manufacturing Co.
 Crown Perfumery Co.
 De Pass and Co. (Beach Blossom)
 Durrant, Geo.
 Ewen (Soaps)
 Grossmith, J., Son and Co.
 Hirst, Brooke and Hirst
 Mann, C. A.
 Maw, Son and Thompson
 Maubert (Soaps, &c.)
 Osborne, Bauer and Cheseeman
 Raines and Co. (Cachous)
 Rimmel, E. (Specialities)
 Rowland and Son (Various)
 Sainsbury, S. (Lav. Water)
 Sanger and Sons
 Shaw, Alex. and John (Perfumery Caps)
 Southall Bros. and Barclay
 Tarrant Brothers
 West, T. (Okef's Mono.)
 Woolley, Sons and Co. (Powder)
 Wright, W. V., and Co. (Soap, Coal Tar)

PEROX. OF HYDR.

Dunn and Co.
 Robbins

PHARM. PREPS.

Allen and Hanburys
 Barron, Squire and Co.
 Battle and Co. (Bromidite)
 Blyton, Bage, and Co.
 Burgess, Willows, Francis
 Burgoynes, Burdizes
 Burroughs, Wellcome (Various)
 Clay, Don and Co.
 Corbey, Stacey (New Preps.)
 Dunn, Lockhart
 Evans, Sons and Co.
 Fellows (Hypophosphites)
 Fletcher (Lars. for Syrups)
 Hearon, Squire and Francis
 Hewlett and Sons
 Hirst, Brooke and Hirst
 Hooper, B., and Co.
 Howards and Sons
 Kay Bros.
 Keith (Conc. Tinctures)
 Maitland (Nitroglycerine)
 Savory and Moore
 Seller, Son and Co.
 Southall Bros.
 Squire (Chemical Food, &c.)
 Symes and Co.
 Thompson, H. A., and Son
 Walker, Troke
 Wink, J. A., and Co.
 Woolley, Sons
 Wyleys (Various)

PILLS (Coated, &c.)

Allen and Hanburys (Schieffelin)
 Beecham, Thomas
 Hooper, Dr.
 McKesson and Robbins (Ovoid, Round)
 Morrison
 Newbatt
 Robertson, J. (Machine)
 Sanger, J. and Sons
 Stenhouse (Rheum. and Gout)
 Smith, W. F.
 Towle (for Females)
 Warner, W. R. (Coated)
 Wyleys and Co.

PITCH

Peace, J. R., and Co.

PODOPHYLLIN, &c.

Keith, B. and Co.
 Smith, T. and H.

POLISHING

Baumgartner (La Brillantine)
 Bradley, Boddas (Abatum)
 Jardine and Co.
 New Military Blacking Co.
 Lim. (Metal)

PAINTS

Oakey, John, and Sons

PARCELIN GDS

Lynch (Lock-lid Covered Pots)

Potna, H., and Co.

Toogood (C.C. Pots, regist.)

PRINTING

Blake and McKenzie

Bowers Bros.

Ford, Shapland and Co.

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Townsend, J. (Exeter)

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Bernstein & Vogt

QUININE SALTS

Drysdale J. W., and Co.

Howards and Sons

Zimmermann

RENNET

Meyer and Henckel

RESPIRATORS

Bourne, Johnson and Co.

Evans and Co.

Frazer & Green "Factory."

Maw, S. Son and Thompson

Sanger, J., and Son

SALICINE

Macfarlan and Co.

SALT

Hassell, Thos. (Bay)

SAUCES, PICKLES

Goodall (Yorkshire Relish)

Lazenby (Harvey's)

SCALES

Hassell, Thos. (Bay)

SHAMPOOS

Hassell, Thos. (Bay)

SOAPS

Goodall (Yorkshire Relish)

Lazenby (Harvey's)

SPONGE

Creswell, R., and Co.

Cresswell Bros.

Peterson, M.

Schutze and Co.

STAMPS

Lindner, M.

Pollard, A. W.

STARCK

Critchley (Glass)

Harron's Glaze

The Patent Borax Co.

STOPPERS

Austin and Co. (Sprinklers)

Barnett and Foster ("The Eclipse")

Bredenbach and Co. (Pt. Lock)

Brook, Feil (Sprinklers*)

Lazebury, E., and Son (Barrett's Patent)

Vallet

STOVES

Clarke, S., and Co. (Gas Heating)

SUGAR

Gibson, R.

SURGICAL

Hutchinson, A., and Co.

Ingram and Son

Marks, A. A. (Artificial Limbs)

Maw, Son and Thompson

Powell and Barstow (Elastic Gum)

Thompson, Millard and Co.

Woolley, Sons, and Co.

SYRUPS

Fletcher, Fletcher (Liquors)

Stevenson and Howell

TEA

Spinner and Co.

The Gt. Tower St. Tea Co.

Walker and Dalrymple

TERMOMETERS

Darton, F., and Co.

Immissch's (Patent Metallic)

Perkin, Son and Rayment

TIN CANISTERS

Noakes, B., and Co.

Self-Opening Tin Box Co.

TIN FOIL

Betta and Co.

TOBACCO

Follows and Bate (Cutter)

TRADE MARKS

REGISTERED

Horn and Son

TRUSSES

Bailey, W. H., and Son

Colwell, H. M.

Haywood, J. et al.

Lynch and Co.

URETHANE

Howards, Sons and Co.

VARNISH

Colthurst and Harding

Seddon, J., and T.

WINES AND SPTS.

Ambrecht, Nelson and Co. (Coca Wine)

Coleman and Co.

Durant, G. (Orange)

Edgell Bros. (Rectified)

Hirst, Brooke and Hirst (Orange)

Ingram and Royle

Metcalfe, Theo., and Co. (Coca Wine)

Robinson, B. (Orange)

Williamson, W. H. (Orange)

VACCINATION

Association for the supply

VALUERS AND TRANSFR. AGNTS

Orridge and Co.

VERMIN KILLERS

Battle, J. R.

Sanford and Son

Steiner and Co.

VETERINARY

Chesebrough (Vaseline, &c.)

Day, Son and Hewitt

Garbett, R. (Fumigators)

James, Lieut.

James, R. J. (Blister)

Snrattha (Dogs)

Walker, Troke and Co.

VINEGAR

Grimble and Co. (Pure)

Rothermel (Making)

WHLESLE & EXPT DRUGSTS

Allen and Hanburys

Barron, Squire and Co.

Burgess, Willows

Boyce, Bridges

Bush, W. Son and Co.

Butler, McCulloch and Co.

Clay, Dod and Co.

Evans, Leecher and Webb

Evans, Sons and Co.

Heron, Squire and Francis

Hewlett and Son

Hirst, Brooke and Hirst

Oldfield, Pattinson and Co.

Potter, and Clarke (American

etc.)

Raines and Co.

Southall Bros. and Barclay

Stevenson and Howell

Summer, R., and Co.

Thompson, Henry Ayscough

and Son

Thompson, Millard and Co.

Walker, Troke and Co.

Woolley, Jas., Sons and Co.

Wright, Layman and Umney

Wyleys and Co.

WINE AND PORT

Ambrecht, Nelson and Co. (Coca Wine)

Coleman and Co.

Durant, G. (Orange)

Edgell Bros. (Rectified)

Hirst, Brooke and Hirst (Orange)

Ingram and Royle

Metcalfe, Theo., and Co. (Coca Wine)

Robinson, B. (Orange)

Williamson, W. H. (Orange)

NEWBERY, LONDON,

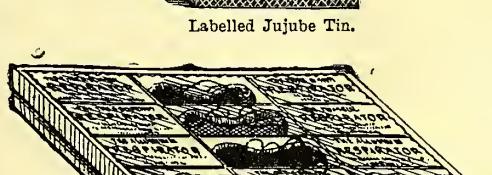
F. NEWBERY & SONS,

1 King Edward St., London.

ESTAB. A.D. 1746.

THE SEASON'S SPECIALITIES AT LOWEST RATES.

The Winter Chest Protector.



Show Case, 1 dozen assorted Respirators.

MENTHOL CONES,

6d., 9d., 1s., &c.

Price List forwarded post free on request.

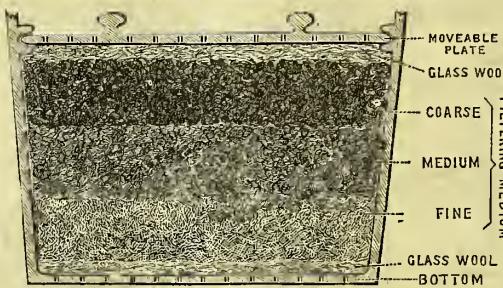
BRITISH DEPOT FOR SUGAR-COATED PILLS, CUTICURA, HIMROD'S ASTHMA CURE, &c., &c.

Card assort'd 1/- Thermometers.

MAWSON'S NEW FILTERS

(PATENT).

SECTION OF FILTERING COMPARTMENT.

SOFTENWATER.PURIFYWATER.REMOVELEAD.SIMPLE,CERTAIN,SATISFACTORY.GRADUATEDACTION.EASILYCLEANED.RENEWEDAT HOME.NO LEAKYJOINTS.PROVEN BYANALYSIS.

RETAIL PRICES.

GLASS.

(Including Six Charges.)

PLAIN	4/6; with Handle, 5/6
ENGRAVED	6/6; do, 7/6
BARREL SHAPE	15/-

EARTHENWARE.

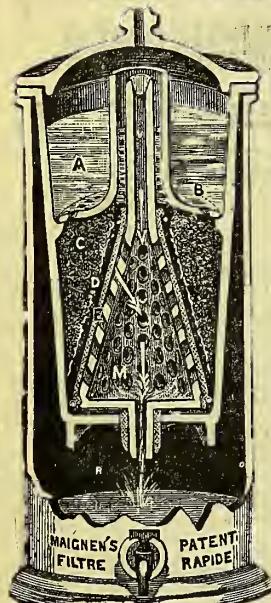
SIZE .. 1 2 3 4 6 gall.
PRICE .. 14/6 21/- 27/- 35/- 50/- each.

See Trade Notes in "CHEMIST AND DRUGGIST," October 23, 1886, page 553.

PROPRIETORS AND MANUFACTURERS,

MAWSON, SWAN & WEDDELL, NEWCASTLE-ON-TYNE.

MAIGNEN'S PATENT

"FILTRE RAPIDE" "ANTI-CALCAIRE"FOR
PURIFYING DRINKING
WATER.

"A better filter could not be desired." — *The Lancet.*

"It filtered the water both quickly and well, and was much valued by our soldiers." — *Lord Wolseley, Nile Expedition.*

All the parts of this Filter are loose, and can be easily got at for cleaning.

- R. Reservoir for the filtered water.
- A. Filter case.
- M. Filtering frame.
- E. Asbestos cloth.
- D. Layer of Powdered Carbo Calcis.
- C. Granular Carbo-Calcis.
- B. Screen.

FOR SOFTENING HARD WATER.

For Washing, Cooking, Tea-making, Watering Plants, and as a substitute for Distilled Water. In Tins at 2d., 6d., 1s., 2s., 3s. 6d., and 7s. each.

"Maignen for ever" is my answer to all inquiries concerning the gout in my hands, which has troubled me so long, and especially during the last two years that I have lived in this chalky district. No words can tell what the suffering has been, nor what the delight at finding it gradually disappearing by the SOLE USE of your 'Anti-Calcaire' and 'Filtre Rapide.' — Miss HAWKINS, Northfleet, Kent.

"I find on coming up to Cambridge that my hands became sore and rough, with a tendency to chap; this is totally prevented by softening the water with your 'Anti-Calcaire.'" — F. H. BURN, Trinity College, Cambridge.

Wholesale London Agents — Barlow & Sons; Sanger & Sons; Newbry & Sons; Edwards & Son; Sutton & Co.; Maw, Son & Thompson; Lynch & Co.; Thompson, Millard & Co.; May, Roberts & Co.; R. Hovenden & Sons; Burgoyne, Burbidges, Cyriax & Farries; Baiss Bros. & Co.; Oppenheimer Bros. & Co.; Butler & Crispie. **Exeter** — Evans & Co., York — Raimes & Co.

Particulars of other forms of "Filtre-Rapide" and diverse applications of "Anti-Calcaire" in Pamphlet, "WATER: PREVENTABLE DISEASE & FILTRATION."

MAIGNEN'S FILTRE RAPIDE & ANTI-CALCAIRE CO., Ltd.,
32 ST. MARY-AT-HILL, LONDON, E.C.



ROBINSON'S ORANGE WINE.

Specially prepared for Quinine Wine, does not deposit, will keep good in any climate, and well adapted for Export Trade. Supplied in Casks containing 9, 18, 30, 60, or 120 Gallons. Terms on application.

PHARMACEUTICAL SHERRY WINE.

This Wine is well adapted for Pharmaceutical Preparations, and is the strength ordered by the B.P. Price, in 6-Gallon Casks, 5/- per gallon; in 2-Gallon Jars, 5/- per gallon, carriage paid. Casks charged 7/-, Jars 2/-, and allowed if returned. Cash or satisfactory reference to accompany order.

B. ROBINSON, Distiller and Brewer of British Wines, Church St., Pendleton, Manchester.

ROBERT GIBSON, MEDICATED LOZENGE MANUFACTURER.

Carlton Works, Erskine Street, Hulme, MANCHESTER, and 1 Australian Avenue, LONDON, E.C.

EXPORTER OF

LOZENGES, BOILED SUGARS, & JUJUBES TO ALL PARTS OF THE WORLD.

SEE PAGE ADVERTISEMENT, JANUARY 15, 1885, NO. 110.

SOLE AGENTS FOR UNITED STATES—WRIGHT & RICH, NEW YORK.

MAUBERT'S

GENUINE BROWN WINDSOR & HONEY SOAPS

ARE THE BEST AND MOST ECONOMICAL.

ALTHAEA

A NEW SOAP ALREADY IN GREAT DEMAND ON
THE CONTINENT, PACKED IN

ELEGANT GLOVE or HANDKERCHIEF BOXES
CONTAINING

12 TABLETS, weighing each about 5 oz., price 3/- per box.

6 TABLETS, " " " price 1/- per box.

WHOLESALE PRICES ON APPLICATION TO

6 LOVE LANE, ALDERMANBURY, E.C.

IMMENSE SALE.

SOLD EVERYWHERE.

WOODS' ARECA NUT TOOTH PASTE,

As used and recommended by Madame
Marie Roze, the Prima Donna.

PRICE, 6d. and 1s. per Pot.

CAUTION.—SEE "WOODS, PLYMOUTH,"
ON EACH POT.

American Recess-Labelled SHOP BOTTLES.



These Bottles are made with a Recess for the Glass Label, which prevents the Labels from being broken in contact with other Bottles. They are always in their proper position, and are protected from acids, &c.

Send for Price Lists and other information to

THE GLASGOW APOTHECARIES CO.
32 & 34 VIRGINIA ST.,
GLASGOW, SCOTLAND.

For Dispensing, Drugs, Oils,

GLASS

Mineral Waters, Perfumery, Patent Medicines.

THE ISLINGTON GLASS BOTTLE CO.
(H. HARRIS & CO., Proprietors),
153 UPPER THAMES ST., CITY, LONDON, E.C.,
Continue to supply their CELEBRATED
DISPENSING BOTTLES & PHIALS

AT LOWEST MARKET PRICES.

6-oz. and 8-oz., 8/- per gross; 3-oz. and 4-oz., 7/- per gross; White Phials at very low prices; Stoppered Rounds, Pomades, Graduated Measures, Panel Bottles, Castor Oil Bottles, Soda Water and Mineral Water Bottles, and all other kinds at very low prices. Write for Prices and see our Samples before ordering of any other house.

Bankers—London and Westminster Bank. Established upwards of 50 years.

EVANS' OL. RICINI SINE SAPORE. (TASTELESS.)

This Castor Oil is *expressly and solely* manufactured for us. It is produced by a process which removes the taste, though not the efficacious properties.

In W. Qts., tins, or bottles with special label.

Prices and samples on application.] [3]

Small samples for distribution to Medical Men and others supplied gratis.

LONDON—

EVANS, LESCHER & WEBB.

Manchester, Birmingham, Montreal, Paris, Sydney, and Victoria, British Columbia.

LIVERPOOL—

EVANS, SONS & CO.

KILNER BROTHERS,



No. 3 GT. N. GOODS STATION, KING'S CROSS, LONDON.

FEEDERS
in great variety,
of

BOTTLES

Best Quality.

Price Lists
Free on application.

NEW INVENTION.

ENAMELLED PATENT LETTERS, for Signboards, Showcards, Price Tickets. Most attractive advertising at less cost than printing or writing. To enable everybody to judge for himself, a Doorplate, with his name elegantly made up, will be forwarded for 5 stamps with further particulars. For estimates and particulars send stamped envelope. Gilt Bevelled-edge Cards at factory prices.

T. STEFAN & CO.,
The British Patent Letter Co., 56 Oxford St., Liverpool.
(Late Offices, Leith Moorfields, Liverpool.) Agents Wanted Everywhere.

SPONGE.

M. PETERSON & CO., Importers,
66 SOUTH JOHN STREET,
LIVERPOOL.
For Home, Foreign, and Colonial Markets.
Wholesale only.

SPONGES.

IMPORTANT NOTICE.

R. CRESSWELL & CO.

SPONGE IMPORTERS,

Beg to announce that they have now removed into their **NEW BUILDING**, at their **OLD ADDRESS**—

32 RED LION SQUARE,
w. c.

ESTABLISHED 1850.

THE NEW QUININE.

"KASKINE."

*No Bad Effect.
No Headache.
No Nausea.
No Ringing Ears.
Cures Quickly
Pleasant.
Pure.*

A POWERFUL TONIC

That the most Delicate Stomach will bear.

ONE MORE VICTIM

THE QUININE HABIT.

ARISKY REMEDY.

ALL ITS VIRTUE,

NONE OF ITS POISON,

IN

KASKINE.

Does not Quinin edo more harm than good? This is an important question, and upon the answer to it depends a great forthcoming change in medical practice.

That quinine is a powerful tonic and anti-febrifuge cannot be disputed; but facts show it to be also a drug whose continued use is attended with results which are often worse than the disease it is meant to relieve and cure. What these are every educated and thoughtful physician knows. In the light of long and wide experience it is at least a debatable point whether quinine has not actually sent to the grave more people than it ever saved from it. The late Dr. J. Marion Sims said there should be a law against the indiscriminate use of quinine.

A lady, Mrs. Leonard, living at No. 205 East 107th Street, New York, had suffered five years with Malaria in its worse form. She was young, and had previously been strong and well. After a time both mind and body yielded and broke down utterly, and her friends feared she would become insane. Her physician gave quinine freely and continuously. The disease, transiently checked, returned, complicated now with quinique poisoning. Between the two Mrs. Leonard was physically wrecked, and in her despair told her husband she hoped for deliverance only through death.

At this crisis a circular accidentally fell into her hands, in which she read this paragraph: "The new quinine that does not kill. Every patient in St. Francis Hospital treated with Kaskine has been discharged cured."

Finding she could test Kaskine without especial medical counsel, Mrs. Leonard procured the article, used it according to directions, and was virtually restored to health in less than three weeks.

In a word, Kaskine has the wonderful virtues of quinine without a trace of its dangerous properties; it is a quinine without reaction. It always helps—never harms.

Kaskine cures on the new septic theory of disease—it destroys all the disease germs in the system. Kaskine is the quinine of the future. Kaskine is a tonic that delicate stomachs will bear.

KASKINE, THE NEW QUININE.

THE NEW QUININE, KASKINE.

SEND FOR THE GREAT BOOK OF TESTIMONIALS (sent post free), unparalleled in the history of medicine. Price of Kaskine, 4s. 6d. per bottle.

Sold by Chemists and Medicinal Vendors, or sent by post on receipt of the price by the London Agents,

A. J. WHITE (LIMITED), 35 FARRINGDON ROAD, E.C.

(PLEASE ADDRESS IN FULL.)

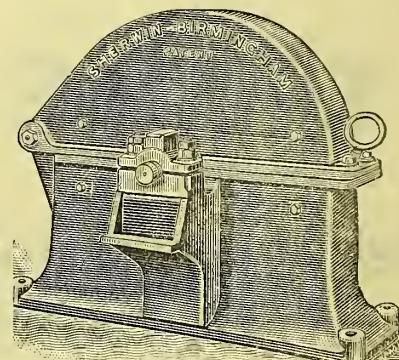
SHERWIN,

192 ALMEH STREET,

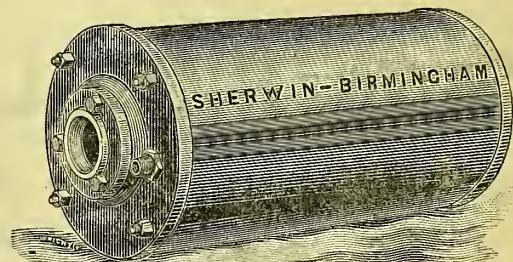
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DISINTEGRATOR.



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HAMAMELIS VIRGINICA

SEDATIVE, TONIC, HÆMOSTATIC, ANTISEPTIC AND REFRIGERANT.

Hazeline.

THE ACTIVE PRINCIPLES DISTILLED FROM HAMAMELIS VIRGINICA.

Hazeline is a pleasant, slightly sweetish, fragrant liquid, and is soothing, sedative, cooling, bland, astringent and purifying.

It has proved satisfactory for the twinges in the muscles so common in rheumatism, and is highly recommended for lameness, stiffness, soreness, lumbago, neuralgia and headache.

Hamamelis has steadily increased in favour with the profession, solely on account of the remarkable clinical results obtained with it, and despite misconception and incertitude. It is commonly known as Witch Hazel or Winter Bloom, and "is remarkable for the late appearance of its yellow flowers, which expand in September or October, and continue until the weather is very cold in winter. The fruit, which is an edible nut-like capsule, not unlike the hazel nut, ripens in the following autumn, and is often mingled on the same plant with the new blossoms" (*United States Dispensatory*). The branches are often used in searching for springs, for as soon as one is over water it droops; hence the name Witch Hazel. The well-known Deep Rock Spring was thus discovered.

The active principle of Hamamelis is extremely volatile, and can be isolated. If it be inhaled in vapour by the workmen in the factory, they say it acts as an anaesthetic and powerful diuretic; it is also hæmostatic. In Hazeline the active principle is dissolved in water with sufficient alcohol to preserve it. The parts of the shrub used in manufacture are the buds and twigs. The winter season, when there is no sap in the wood, is selected for the gathering.

Witch Hazel seems to have been first used by the Indians as a sedative, and a discutient in tumours, abscesses and enlargements. It enjoys great repute among them, as it does elsewhere, for piles. Dujardin-Beaumetz attributes its utility to an action on the muscular fibre of veins.

One of the very best agents that can be used in catarrh of the nose and throat, by reason of its anti-septic and astringent properties, is Hamamelis. Under its use a bad cold abates, and snuffing it into the nostrils in catarrh gives comfort. As a gargle in sore throat, quinsy, pharyngitis and diphtheritic sore throat, it is very highly praised. For the "red gūm" of infants nothing better is known. Hamamelis often assuages toothache and facial neuralgia if some of it be held in the mouth. It has a clarifying, softening, healing influence upon the skin, and is used extensively for chapped hands, cracked lips, sunburnt skin, and freckles or other cutaneous discolouration.

Steam inhalations of it are said to be excellent in pulmonary complaints.

In inflammation of the eye, with pain, photophobia, redness and a discharge, if diluted with an equal part of water, and poured constantly on a piece of Lawton's Absorbent Cotton laid on the eyelids, it acts admirably.

Dr. Lauder Brunton, in his very excellent treatise on "Materia Medica," says:—

"It is used as an external application to piles, bruises and inflammatory swellings. Internally it is a very efficient hæmostatic in bleeding from the lungs and other internal organs. In some cases of hæmoptysis I have found it more efficient than Digitalis or Ergot, although in other cases Digitalis and Ergot have succeeded better. It checks the flow in menorrhagia when given during the period, and it lessens pain in dysmenorrhœa."

Dr. Ringer says:—

"It is very useful in some forms of menorrhagia; the dose is two drachms of Hazeline twice or thrice a day. It often relieves the pain of dysmenorrhœa. An obstinate case of bleeding from the bladder, due probably to a vascular growth, was efficiently treated by injecting twice daily into the bladder half an ounce of Hazeline.

"It is very valuable for piles; it rarely fails to check bleeding from piles, even when administered by the mouth. . . . It not only checks bleeding, but if this treatment is persisted in for several months, its action on piles that are not very large is permanent and effectual. It has been employed successfully in varicocle, and I have seen one case in which, during the employment of the drug, the varicosities entirely and apparently permanently disappeared. Dr. Preston extols it in phlegmasia dolens. It is useful, too, in catarrh of the mucous membrane, and snuffed up the nose is beneficial for colds in the head and in hay fever." Dr. Ringer further adds that he has "found it useful in checking the slight oozing of the blood sometimes following a confinement."

The following is from a report by Richard Halpin, Esq., M.R.C.S., House Physician, Royal Chest Hospital, E.C., published in THE BRITISH MEDICAL JOURNAL, January 31st, 1885:—

"The patient's general health suffering considerably, he was reduced to a condition of great debility, and was forced to seek advice at St. Bartholomew's Hospital. He was found upon examination to be free from piles, fistula, etc., and was treated with little or no benefit as an out-patient. In November he was treated as an out-patient at the Royal Hospital for Thoracic Diseases, and was found to have taken almost every drug in the Pharmacopœia, but the haemorrhage still continued. Knowing the value of Hamamelis in these cases, it occurred to me that the aqueous distillate of the fresh bark known as Hazeline might be of use, and I accordingly injected an ounce diluted with a small quantity of water into his rectum, giving at the same time half a drachm by the mouth every three hours. The bleeding was at once arrested, and although the patient remained for some weeks under observation, there was no return of his old trouble."

The most favourable reports are given of its effectually checking haemorrhage from the nose, mouth, throat, lungs, stomach, womb, kidneys, bladder and rectum. For anal fissures and ulcerations it enjoys absolute precedence over all other drugs.

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Several years since we introduced these to the drug trade and medical profession, since which time we have at great expense advertised them in various ways, the result being their approval by all who have become familiar with them, with a consequent large demand and sale. We have not only maintained the original standard of quality, but have constantly improved them, so that they are now pronounced by experts to be perfect in their way, and greatly superior as pharmaceutical products to the many imitations which have since been offered at lower prices. We have from the first sold at as low a price as was consistent with our expenditure in manufacture and advertising, and we believe that not only has the business upon these products been fairly earned by us, but that it is to the interest of the drug trade to sell them only, rather than to supply the imitation goods. Our present reduced rates upon these goods offer a good margin to the retailer, each shilling package paying a net profit of, say, 5d. If the inferior goods cost the dealer nothing they would pay no better profit at the prices they bring. The profession and public are familiar with our goods, and willingly pay a shilling for 25 or 40 elegantly compressed powders. It is therefore, seen that our products are the most profitable, and will be found the most satisfactory by the Trade Profession, and Public.

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NITRO-GLYCERINE TABLETS.

Tabellæ Nitroglycerini, B.P. 1885 (Martindale).

By authority of the Medical Council, the compilers of the British Pharmacopœia have adopted and made OFFICIAL Nitroglycerine Tablets, as manufactured by me during the last eight years.

The Nitroglycerine is in a perfectly fixed solution in the Chocolate. The Tablets weigh ONLY 2½ grains each, an ounce containing about 170 doses. They are sold at the following prices to the trade, subject:—

In Boxes, Retail 2s. 6d. and 4s. 6d. each.
" Trade 24s. and 43s. per doz.

FOR HOSPITALS AND DISPENSING:

In Bottles, Retail, 1-oz., 6s. 6d.; 2-oz., 10s.; 4-oz., 16s.; 8-oz., 27s.; and 16-oz., 48s. each.
" Trade, " 60s.; " 96s.; " 156s.; " 264s.; " 480s. per doz.

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ADVERTISEMENTS of employers and assistants can now be received by us up to the first post on Friday mornings, and will be inserted in the current week's issue.

CORRESPONDENTS will please note that our registered telegraphic address is changed from "Chemdrug, London," to "Chemicus, London," the Post-office authorities having informed us that they found the former word inconvenient.

THE ART OF PHARMACY.—We have reprinted this treatise from THE CHEMISTS' AND DRUGGISTS' DIARY, and can supply a limited number of copies to subscribers at 1s. each.

DIARY FOR NEXT WEEK.

Monday, January 3.

Society of Chemical Industry, London Section, Burlington House, W., at 8. Mr. Watson Smith on "The Explosive 'Kinetic'."

Tuesday, January 4.

Royal Institution, Albemarle Street, at 3. Professor James Dewar on "The Chemistry of Light and Photography."

Thursday, January 6.

Royal Institution, at 3 p.m. Professor Dewar on "The Chemistry of Light and Photography."

Saturday, January 8.

Royal Institution, at 3 p.m. Professor Dewar on "The Chemistry of Light and Photography."

Football match, Primrose Hill, at 3.30 p.m. P.F.C. v. Aldenham Institute.

THE SHOP HOURS BILL.—Our poll on Thursday morning, as announced. The final result is that, out of 10,000 voting papers issued, 2,227 have been returned to us, of which 1,330 are in favour of compulsory closing, 734 against it, and 163 neutral, although a very great majority of the latter would be in favour of local option. Below is a table of the polling in different towns and other parts of the kingdom. We think it may fairly be claimed that two-thirds of the chemists in this country would welcome the incorporation of Sir John's measure in the statute book, for, had the voters been less apathetic, the proportion would most likely have remained unaltered; in fact, the proportionate majority in favour of the measure has increased towards the close of the poll. There is an article by Sir John Lubbock in the last number of *Good Words*, in which the hon. baronet speaks with great confidence of the prospects of his measure, and indicates a firm resolution on the part of himself and his friends to press it forward. Sir John Lubbock states that, although at first it appeared to the promoters of the measure that a system of local option would be preferable to one of compulsion, subsequent consideration has demonstrated that the measure would work more smoothly if applied impartially throughout the country. It is further maintained that the objection against the Factory Acts, that they might cause trade to be driven from this country to other nations, cannot possibly be applied to the proposed Bill, and that not a pennyworth less retail business will be transacted in the kingdom if all shops are made to close at a uniform hour. The opponents of the Bill will of course reply to this objection that, although the total volume of retail trade will not be affected by the measure, yet "the stores" will apportion a greater percentage than before. But it is certainly strange that not more of these opponents should have taken the trouble to cast their vote against the Bill, if it really threatens to become so obnoxious a measure as some of them seem to imagine.

Analysis of the Voting.

		For	Against	Neutral
ENGLAND				
Metropolis (East End and working-class districts) ..	..	86	88	10
(suburban) ..	..	71	59	16
(City and West End) ..	..	23	26	5
Total	180	173		31
Birmingham	40	9		5
Bradford	12	5		0
Derby	5			
Hull	21	6		2
Leeds	17	9		2
Liverpool	38	14		1
Manchester and Salford	61	20		1
Newcastle-on-Tyne	9	2		1
Nottingham	23	13		0
Portsmouth	9	8		3
Sheffield	11	4		3
English watering-places	29	43		3
Total	275	138		21
Northern counties	208	106		45
Midland	181	80		17
Eastern	91	57		14
Southern and Western counties	198	99		26
Total	678	342		102
Total for England		1,133	653	154
SCOTLAND				
Edinburgh	20	10		1
Dundee	6	1		0
Glasgow	21	11		1
Counties	82	27		1
Total	129	49		3
IRLAND				
Total	9	5		6
WALES				
Total	59	23		4
Grand total	1,330	734		163

Provincial Reports.

Items of news, and newspapers containing matters of interest to the trade, sent to the Editor, will much oblige.

BEDWORTH.

PRESCRIBING BY CHEMISTS.—Dr. Iliffe, Coroner for North Warwickshire, held an inquest on December 21, at Bedworth, on the body of a child named Elizabeth Gertrude May Beech (aged 4½ years), who had been attended by Mr. A. Homer, chemist and druggist, of Bedworth. Deceased was the daughter of Mr. C. W. Beech, manager at a shoe establishment at Bedworth. The child was recently suffering from quinsy, and Mr. Homer, on being called in, prescribed for her, and his medicines were administered. He also visited the child daily at her home. The child eventually died, and in the father's opinion she was choked by the matter and mucus resulting from the breaking of the quinsy. Prior to the death the father asked Mr. Homer if there was any danger, and he replied that he did not think there was. Police-sergeant Cross gave evidence as to having some time ago cautioned Mr. Homer, at the Coroner's request, against practising as a medical man. In reply to the Coroner, Mr. Homer said he had served an apprenticeship of five years to a duly qualified medical practitioner, and that he had attended the necessary college lectures. He had, he said, thirty testimonials, which he produced, from leading men in Birmingham as to his ability. He assured the jury that the deceased received every attention and care at his hands. In reply to the Coroner, Mr. Homer said he had attempted to get a legally-qualified certificate, but had failed. He had, however, been connected with the profession all his lifetime. The Coroner having summed up, the jury, after deliberating for a short time in private, returned the following verdict:—"That the deceased died from asphyxia, produced by the bursting of a quinsy, and that Mr. A. Homer had committed a breach of the law by attending, prescribing, and giving a certificate of the death of Elizabeth Gertrude Mary Beech; but, taking into consideration that this is the first time that Mr. Homer has been brought before the Coroner's court, we hope that the penalty (20l.) for such disobedience may be waived, in consideration of his giving a written undertaking to the Coroner that from this time forth he will not, under any circumstances, infringe upon the law which relates to such proceedings." In reply to the foreman, Mr. Homer said he was aware he had broken the law, and he was sorry for it. He also expressed his willingness to give a written undertaking not to practise again. The Coroner said the jury had taken a most lenient view of the matter, and he quite concurred in the decision at which they had arrived. He believed in giving a man every chance, and he hoped that what had occurred would be a warning to Mr. Homer. The inquiry then terminated.

BIRKENHEAD.

PETROLEUM GAS EXPLOSION.—A sad accident, attended, unfortunately, with the loss of six lives, took place at Birkenhead on Sunday last. Not many days before the steamer *Petriana* had arrived in the Mersey from the Black Sea with a cargo of petroleum in bulk. The vessel is the first that has been constructed with tanks for the Black Sea petroleum trade. In the recent storm the *Petriana* was off Sicily, and sprung a leak, and the cargo having been discharged, she was taken to Messrs. Clover & Clayton's yard at Birkenhead for repairs. These were completed, and on Sunday a party of engineers and workmen went with a naked light into the tank that had been repaired to inspect the work. Soon an explosion occurred, and though six men reached the deck with their clothes in flames, four were killed on the spot, and two others have died since.

BRADFORD.

DEATH UNDER CHLOROFORM.—On Wednesday afternoon Mr. William Henry Hattersley (principal member of the firm of W. H. Hattersley & Co., Bradford) died under the influence of chloroform while undergoing an operation.

CHELTENHAM.

SUICIDE OF A CHEMIST.—Frederick William Hands (aged twenty-six years), the son of a chemist, committed suicide at Cheltenham on Christmas Day. Deceased had lived with his father, to whom he was assistant, until about a fortnight since, when he left home. He met his brother on Thursday night, and told him it was the last time he would see him, as he was going to take prussic acid, at the same time exhibiting a small phial, which the brother unsuccessfully attempted to take from him. Deceased then went away and told another man he should poison himself. At one o'clock on Christmas Day he knocked at his father's door, and on his father appearing said, "Oh! father, I have taken prussic acid." On being admitted into the house he fell on the floor and expired.

PRESCRIBING BY CHEMISTS.—An inquest was held at the Workhouse last week before Mr. Coren, coroner, respecting the death of Lucy Ridler (aged twenty years), who had died at Wohurn Villa, Grosvenor Street, on December 17.

Miss E. Minnie Hinder, of Woburn Villa, Grosvenor Street, said deceased had been for nearly two years in her father's service as general servant. Her general health was good up till about July last, when she went to her sister's for a holiday; on her return she was suffering from a chill. Mr. Jessop, surgeon, attended the deceased about three months ago, but only saw her twice. Deceased was able to attend to her duties until the Tuesday, when she complained of a pain in her right side and shortness of breath, and went to bed. On Tuesday evening witness's father went to Mr. Woodward's, chemist, of High Street, and brought back some medicine (prescribed by Mr. Woodward) and a liniment for the deceased. The medicine was taken by the deceased, and the liniment was painted on her side. On Wednesday she still complained of pains in her side and chest, but towards evening her breath was better; during the day she had partaken of some light food. On Thursday she complained that the pain had gone over to the left side, but her breath was much better. On that day also she had taken some light food, keeping her bed all the time. Witness went to deceased's room about 9 A.M. on the morning of the day on which she died. Deceased said she was very much better, and thought she would be able to get up next day. One of witness's sisters took up some breakfast to deceased, and returned saying she was asleep. Another sister went up about a quarter to eleven, and almost immediately afterwards came down and said she thought deceased had fainted. Witness went upstairs, and she also thinking that deceased had fainted, sent for a neighbour (Mrs. Stewart), who came at once; and, on seeing her, Mrs. Stewart pronounced life to be extinct. Deceased appeared to have died in her sleep. No medical man had seen the deceased. No communication of the deceased's illness was made to her relatives, because witness did not know where they were living. Witness's father's housekeeper was away from home at the time, she having gone to see a sick sister; and her father was also away from home on business, he being a commercial traveller.

Mr. Solomon Woodward, chemist and druggist, of 431 High Street, deposed that on Tuesday, December 14, about eight o'clock, Mr. Hinder called upon him and said his servant had gone to bed with a very bad cold and difficulty of breathing, and witness prescribed a mixture of mindererus, sweet nitre, and camphor. Mr. Hinder also told witness the young woman was suffering from pain in the right side, and he gave a liniment of strong acetic acid, to be painted on her side every three hours. Witness also desired Mr. Hinder to see him early next morning, and tell him how she was. Mr. Hinder called, as requested, and said his servant felt better, but still suffered from the pain in her side. Witness told him he would alter the mixture, but the painting was to be continued. A fresh mixture was sent about midday on the Wednesday; it was a similar mixture to the old one, only it contained in addition ammonia and Dover's powder, with instructions that it was to be taken every four hours and the liniment continued. On the Wednesday evening one of the Misses Hinder came to his shop for some more liniment, and said the deceased was very much better. Witness heard nothing more of the case until, on Friday afternoon, Miss Minnie Hinder came and said the young woman was dead. Witness treated her for a cold.

The Coroner.—Are you aware that you are subject to heavy penalties for prescribing for sick people?—I should not prescribe in any case of serious illness.

How were you to tell whether this was a serious case or not?—From Mr. Hinder's description of the symptoms.

Then you prescribed for this young woman from the description of her case given by a gentleman who was ignorant of the true nature of the ailment?—Yes; I thought from what he told me it was an ordinary case. I often prescribe for simple cases and ordinary colds. I should have suggested to Mr. Hinder the advisability of calling in a medical man if he had not told me that the young woman was better on the Wednesday morning.

How many mixtures do you make up for patients without medical prescriptions in the course of a year?—Not many.

I have heard of chemists seeing patients at their own houses. Do you ever do so?—No.

Don't you know you are liable for penalties?—If I were to give a wrong prescription of course I should be.

Yes, but that is not all. You are liable for prescribing at all, seeing that you are not a duly qualified medical practitioner. The penalty is 20*l.*, I believe, for each prescription you give. Don't remain in ignorance any longer of the position in which you have placed yourself. I have already spoken very strongly in Cheltenham about this practice, and I am surprised there should be any chemist in Cheltenham that does not know to what penalties you have rendered yourself liable.—Witness: I have been in business over twenty years, and have never had a charge made against me before.

I do not make a charge against you now. I am only pointing out to you the risk you are running. It is not only a contravention of the Act of Parliament to do as you have done, but it is also a misdemeanor under the Act.—Witness: I hope I shall take care and profit by your warning. It shall never happen again.

Some chemists think I am too severe on them, but when one looks at the serious consequences that might ensue in cases of this sort, I am sure it will be agreed that too much care cannot be exercised. It might happen that a chemist, not having the scientific knowledge of a medical practitioner, would be misled by the symptoms described to him, and perhaps in this case Mr. Jessop, who is about to give evidence, will say that the young woman was suffering from something far more serious than the ailment prescribed for. Let this be a warning to you. I know it is a common practice for chemists to prescribe for a common cold, but even that is a contravention of the Act. I should not be discharging my duty if I did not tell you that you are running the risk of serious consequences to yourself, and what you do in this way might involve the life of another.

Mr. Jessop, surgeon, said he saw the deceased once or twice in September last, and then prescribed for her; she appeared to be suffering from debility and poor ness of blood. He had, by the direction of the Coroner, made a post-mortem examination of the body, which appeared to have been well nourished, and which bore no external marks of violence. On examining the chest he found the cavity filled with serum, and on examining the pleura he found extensive inflammation on the right side, extending to the substance of the lung. The inflammation had gone on to suppuration. The heart was weak and flabby. The other viscera were healthy, as was also the brain. He considered the cause of death to be pleuro-pneumonia. The disease appeared to have been very rapid in its course, and the primary symptoms would be the ordinary ones of a cold. Witness had seen the prescriptions prepared by Mr. Woodward, and they would have been applicable to the disease in its primary stages. In order to prescribe properly for a patient it is necessary to make a stethoscopic examination. Had medical assistance been called in on the Thursday, she would have had a better chance of recovery.

The Coroner, in summing up, again remarked on the practice of chemists prescribing for patients, and said that while the symptoms in this case in its primary stages had been those of an ordinary cold, yet as time went on danger had increased, and if a medical practitioner had been called in the young woman would at least have had a better chance of recovery.

The jury returned a verdict in accordance with the medical

testimony, and expressed their opinion that Mr. Hinder (who was present at the inquiry) had done all in his power in the case.

LIVERPOOL.

EXPLOSION.—Last week a blacksmith named W. Powell, residing at 2 Gore Street, Toxteth Park, received a nitrous oxide gas bottle to repair, and, on the supposition that it was empty, placed the cylinder in the smithy fire, and vigorously blew the bellows. In a few minutes there was a loud report; the cylinder had burst and demolished the fireplace, and done other damage. The man who brought the bottle was seriously injured, and was taken to the Royal Southern Hospital. The blacksmith was also injured.

FIRE AT LEWIS'S.—The large building in Ranelagh Street, Liverpool, in which Messrs. Lewis, the "universal providers," had for a number of years carried on their business, was on December 24 the scene of a fire which surpassed in extent any conflagration in Liverpool since the burning of the Landing-stage. The outbreak was first noticed shortly before 2 A.M., and though the whole available strength of the fire brigade was early at work, it was soon perceived that the building could not be saved. Enormous stocks of light and inflammable goods had been laid in, in preparation for the busy week expected at Christmas, and the flames spread with startling quickness to every portion of the premises. All the surrounding property, including the Central Railway Station, was for a time in danger; but the brigade succeeded in confining the fire to Messrs. Lewis's building, of which nothing but the walls were left. It is estimated that the loss will amount in the aggregate to nearly 400,000*l.*. About a thousand employés of the firm are thrown out of employment, for a time at least. Messrs. Lewis were the first to introduce "low prices" into the local patent medicine trade. They carried on a very extensive business in "patents" and homœopathic medicines, which they sold at a heavy reduction. Their patent medicine department has fallen a prey to the flames.

MANCHESTER.

A CHEMIST POISONED.—Mr. Sidney Smelt held an inquest on Wednesday on the body of Charles Butterworth Sutcliffe, 51 years of age, a chemist, late of 21 Embden Street, Chorlton-on-Medlock. Alice Sutcliffe, wife of the deceased, stated that she returned on the previous night from Liverpool and found the shop locked up. With the assistance of some neighbours she got into the house and found her husband lying dead in the bedroom. Deceased used to take chloral, but he had not done so for a year. Mr. J. Collier, resident surgical officer at the infirmary, stated that he had made a post-mortem examination of the body, and found that the conditions were consistent with death from chloral. The jury returned a verdict accordingly.

SHEFFIELD.

THE ADULTERATION PROSECUTIONS.—The local Health Committee have had the recent actions against shopkeepers for the alleged defective tincture of opium and paregoric under consideration; and, feeling the great importance of the subject, have instructed their officers to apply to the stipendiary magistrate to state a case under the Summary Jurisdiction Act, 1879, for the opinion of the Queen's Bench Division of the High Court. The case will be prepared and entered for argument in due course. The summonses which were issued for Wednesday have been withdrawn owing to the stipendiary's ruling last week. Had the case been heard, there would have been, it is understood, a stiff fight between the borough analyst and a London pharmaceutical authority of note, whom the Trade Association had asked to defend a leading chemist here, on the question of the strength of some citrate of iron and quinine which he had dispensed.

SCOTLAND.

ABERDEEN.

DR. THEODORE CASH has been appointed Professor of Materia Medica in the University of Aberdeen, in the room of the late Dr. Dyce Davidson. The new professor is at

present assistant to Dr. Lauder Brunton. He is a graduate and gold medallist of the Edinburgh University, and completed his studies at Continental schools. Since returning to London Dr. Cash has, as private assistant to Dr. Brunton, been engaged in joint investigation upon the action of drugs and allied subjects. He has held collegiate appointments in King's College and St. Bartholomew's Hospital, and during the last two and a half years he has been entrusted by the Local Government Board with a research on the action of disinfectants. Last year he was further instructed by them to conduct the analytical part of an inquiry into the nature of infantile diarrhoea. Dr. Cash has written various works on physiological and therapeutical subjects.

'GLASGOW.'

METHYLATED SPIRIT DRINKING.—On Sunday John Docherty (aged thirty-five years), labourer, died at the Royal Infirmary, where he had been removed by the police. Deceased had been in the habit of drinking methylated spirits, and was found by the police lying in the street in an incapable condition.

A PUGNACIOUS VETERINARY SURGEON.—John B. M'Queen, veterinary surgeon, was charged in the Central Police Court, before Stipendiary Gemmel, on December 24, with assaulting John Henderson, chemist and druggist, Cathedral Street. M'Queen, on the Monday previous, called at complainant's shop for a "pick-me-up." He entered the consulting-room and picked up some books, which Mr. Henderson demanded back. An altercation took place, with the result that M'Queen struck Mr. Henderson on the eye, causing it to bleed. The Stipendiary found the charge proved, and ordered the offender to pay a fine of 5*l.*, or go thirty days to prison, and also to find caution in 10*l.* to keep the peace for twelve months, or go other thirty days to prison.

FRENCH PHARMACEUTICAL NEWS

(From our Paris Correspondent.)

HONOUR TO THE DRUG TRADE.—M. T. Germain, formerly a wholesale druggist, has been elected assistant-judge for two years at the Paris Tribunal of Commerce.

RESTRICTING THE SALE OF PHOSPHORUS.—On December 15 President Grévy issued a decree, in conformity with a law previously enacted, ordering that hereafter importers of phosphorus shall obtain from the customs officials a certificate showing the quantity of the product imported and the names of purchasers of the same. Said certificate must be returned within three months, accompanied with a discharge issued by the municipal authorities at the place of residence of the purchaser or purchasers. Appropriate penalties are at the same time edicted against violators of the law. Very good, you will say, this is a wise precaution against phosphorus poisoning; if the same were done about the sales of sulphuric acid there would be fewer cases of "vitrioling." Not at all; the intention of the legislators is not to protect public health. They only want to protect that huge monopoly, the "Société Générale des Allumettes," against makers of illicit matches.

A SCIENTIFIC CONGRESS.—The "Association française pour l'avancement des Sciences" announces that it will hold its next meeting in September 1887, at Toulouse, the old capital of Languedoc. The municipal council of that city has granted 10,000 francs towards the expenses of the session. As usual many foreigners will be invited, and are expected to attend. The exact date of the meeting will be determined at a later time.

MEDICAL PATHOLOGY.—At its last meeting the Paris Faculty of Medicine proceeded to elect a successor to the late Dr. Peter for the chair of medical pathology. According to custom they presented three names to the minister, in the following order, namely, Messrs. Dieulafoy, Strauss, and Duguet. This, of course, is equivalent to the election of Dr. Dieulafoy.

A SCHOLASTIC DEMONSTRATION.—A number of pupils of the city schools and colleges indulged the other day in a mild demonstration under the windows of M. Berthelot, because this year the Christmas vacations were too short for

their liking. The immediate result was that an extension of the holidays, which was under consideration, was summarily disposed of. On the other hand, the students of the Faculties and of the College of Pharmacy complain that their vacations—from December 24 to January 3—are too long, and cause them an unnecessary loss of time. It is hard to please everyone.

PHARMACISTS OF THE SECOND CLASS IN THE ARMY.—An order just issued more clearly defines the status of this interesting class in the army. A list of all who have obtained the degree of pharmacist of the second class is to be made by the secretaries of the colleges of pharmacy and handed to the army commanders, who are to institute inquiries respecting the moral character and general standing of those residing within their circumscription. The commanders shall in their turn establish special lists from which army "pharmacien auxiliaires" shall be selected. The following are to be excluded from the lists:—(1) Those to whom the inquiry about morals proves unfavourable; (2) those condemned by courts of justice to penalties disqualifying them from becoming officers in the French army; (3) bankrupts; (4) those declared by the competent boards physically unfit for military duty.

SALICYLIC ACID OFFICIALLY CONDEMNED.—At the sitting of the Academy of Medicine held December 28, M. Vallin read the report of the committee appointed to consider the question of the use of salicylic acid in preserving aliments. The committee was formed in July 1885, at the request of the Minister of Commerce, and was composed of all the members of the sections of hygiene, legal medicine, and sanitary police, with M. Berthelot as president, and M. Vallin as secretary, or, as the name is here, *rapporteur*. The report is a very full one, embracing a large array of figures, facts, and experiments, either carefully collected or obtained from personal observation; but at present it suffices to mention the conclusions arrived at. They are as follows:—“(1) Medical observation has proved that small daily doses of salicylic acid or its derivatives may cause considerable troubles in the economy of persons peculiarly disposed, of aged people, or of those in whom the renal or digestive functions have been impaired; (2) therefore the addition of salicylic acid or its derivatives, even in small doses, to solid or liquid aliments should not be permitted.”

BANKRUPTCY REPORT.

Re HENRY BLAND, Falsgrave, Scarborough, Chemist.

THE statement of affairs in this matter is as follows:—Liabilities.—To unsecured creditors, 260*l.* 1*s.* 6*d.*; creditors fully secured, 30*l.*; less estimated value of securities, 30*l.*; total, 260*l.* 1*s.* 6*d.* Assets.—By stock-in-trade, estimated cost, 50*l.*; estimated to produce, 30*l.*; machinery, trade fixtures, fittings, and utensils, estimated cost, 65*l.*; estimated to produce, 40*l.*; household furniture, estimated cost, 115*l.*; estimated to produce, 60*l.*; book debts, good, 2*l.* 6*s.* 6*d.*; total, 132*l.* 6*s.* 6*d.*; less preferential creditors for rent, rates, taxes, and wages, payable in full, 69*l.* 14*s.* 6*d.*; leaving net assets, 62*l.* 12*s.*, and showing a deficiency of 19*l.* 9*s.* 6*d.*

The following are the principal creditors:—

	Unsecured.		
	£	s.	d.
Boothroyd, Jonas, Huddersfield	45 0 0
Chapman, Henry, Scarborough	13 0 0
Escreet, James, Hull	20 0 0
Phillips, Jesse, Middlesborough	24 0 0
Townend, James, Leeds	10 0 0
Woolf, A., York	28 0 0
Yorkshire Discount Company, York	26 13 4
Creditors under 10 <i>l.</i>	93 8 2
			260 1 6

	Fully Secured.		
	£	s.	d.
Bradley, John, Scarborough	30 0 0
			30 0 0
	Preferential Creditors.		
Robert Baker, Scarborough	24 0 0
Charles John Owen, Scarborough	30 0 0
Creditors under 10 <i>l.</i>	15 14 6
			69 14 6

SIMPLE CHEMICAL EXPERIMENTS.

Being the Result of POST-CARD COMPETITION No. 8.

(Concluded from page 834.)

The Humorous Egg.

In a quill place a small quantity of quicksilver, and, having fastened it well in, insert the quill through the end of a newly-boiled egg, which egg being placed on the table will dance about till cold.

W. MARRISON, Liverpool.

The Liquid Island.

A half-pint flask should be half filled with a saturated solution of sulphate of zinc; about a drachm of bisulphide of carbon, tinted with a trace of iodine, should then be carefully poured on the surface of the zinc solution, and the flask filled up with water; the latter should be carefully poured in so as to mix as little as possible with the zinc. The carbon will assume the shape of a perfect amethyst-coloured sphere floating between the two fluids, and, if undisturbed, will last for weeks.

M. BUCHNER.

To Prove that Loaf-sugar consists largely of Charcoal.

LABEL.—Having put the sugar into the glass beaker, dissolve it in the smallest quantity of boiling water; now pour in the oil of vitriol, stirring together with a glass rod or piece of stick. **Note.**—The beaker should be placed in the centre of a bedroom basin or old tray, as some of the contents of the beaker are apt to overflow. The parcel should contain a glass beaker (thin), capacity say 20 oz., 1 lb. of loaf sugar, and about 10 oz. of strong commercial sulphuric acid. The success of the experiment depends on not using too much water, and in rapidly pouring in the acid.

W., Edinburgh.

To Boil Water by Cooling it.

Place the flask (about one-third full of ordinary water) above the Bunsen burner, and bring it to the boil. While boiling freely, put out the gas, and immediately insert the rubber cork into the neck so as to close the flask. It will be found that the contents can be made to boil violently by pouring ice water on the upper part of the flask. Parcel must contain a Florence or other well-annealed flask, a rubber cork to fit it, and a suitable Bunsen burner.

W., Edinburgh.

Parlour Fireworks.

Small circular filter-papers, saturated with strong solutions of boracic acid, lithium carbonate, sodium chloride, &c., supplied in box with bottle of S.V.R.

INSTRUCTIONS.—Fold papers into cones, pour on few drops S.V.R., and set on fire.

W. S. HARVEY, Margate.

Ten-inch circular or square filter-papers, soaked in moderately strong solutions of the undermentioned chemicals and dried, give very effective results when lighted in a dark room, or thrown, on ignition, in the air against a dark background. Red—solution of nitrate of strontia; violet—solution of chlorate of potass; yellow—solution of carbonate of soda; green—solution of nitrate of baryta. To be wrapped in half or one dozen packets, assorted colours, and labelled with directions for using.

H. ELEY, Birmingham.

Chameleon Mineral.

Equal parts of black oxide of manganese and pure potash mixed together and heated in a crucible. Keep in stoppered bottles. Might be sold in $\frac{1}{2}$ or 1 oz. wide-mouth stoppered bottles labelled "Chameleon Mineral"; for making a variety of colours when mixed with water."

Dissolve a small quantity in a tumblerful of water, when a variety of colours will be produced, changing from one to another.

H. ELEY, Birmingham.

Pharaoh's Serpents.

Bichromate of potass., 2 parts; nitrate of potass, 1 part; powdered white sugar, 3 parts.

Powder the ingredients separately, then mix thoroughly. Make small paper cones about the size of fumigating pastilles, and press the mixture into them. One dozen may be put into a No. 6 slide powder box, and labelled "Pharaoh's Serpents; an amusing and harmless experiment."

Place one of the cones on a plate and light the point. 6d. per box.

H. ELEY, Birmingham.

Lead Tree.

Half oz. of sugar of lead put into a No. 6 slide powder box, and labelled, "Composition for making Lead Tree. Poison."

The contents of this box to be dissolved in 1 pint of distilled, or filtered, rain water; then filter the solution and put the clear liquid in a wide-mouth bottle, in which suspend a piece of zinc inserted into the cork. Let the bottle stand for a few hours without shaking. Price 6d.

H. ELEY, Birmingham.

Glass Engraving.

The materials required for this are as follows. They may be packed in a small box:—1 oz. sulphuric acid, few crystals fluorspar, lead vessel, spirit lamp or candle, piece of glass, wax, and sharpened piece of wood.

DIRECTIONS.—Put the sulphuric acid and fluorspar into the lead cup. Melt the wax over the glass, and by means of the sharpened wood trace some designs on the one side of the glass. Lay the glass, waxed side down, on the lead vessel. Heat the latter by means of the lamp or candle. The design will shortly be found to be fixed in the glass, and the wax may be scraped off, leaving a beautiful etching on the glass.

W. E. WILSON, Hawick.

Magic Ink.

Solution of cobalt chloride. Any writing or picture done with this fluid is invisible until heated strongly for a few seconds, when the written characters or picture appear of a blue colour. By simply breathing upon the paper they again disappear from view, to reappear if again heated. This creates some amusement at evening parties.

J. BOYLE, Glasgow.

Vanishing Spoons

are a source of amusement for conversaziones, &c., and are made from this alloy: R. bismuth, 8 oz.; lead, 5 oz.; tin, 3 oz. As soon as boiling tea is poured into the cup in which they are placed, the spoons disappear from view. The drawback about this experiment is that the spoons do not reappear.

J. BOYLE, Glasgow.

Experiments with Soap-bubbles.

The best soap solution to use for the production of bubbles that can be blown to a great size and do not burst readily is the following:—Castile soap shavings, $1\frac{1}{2}$ part; glycerine, 15 parts; water, 20 parts. A large bubble blown with this solution has kept unbroken for forty-eight hours under a shade. Blow a bubble and let it fall in a glass dish, in which previously a little vinegar and common soda have been placed. It will remain suspended in the dish, apparently supported upon nothing. Fill other bubbles with carburetted hydrogen from gas-jet. Fill others with carbonic acid gas; others, again, may be filled with phosphoretted hydrogen (safely prepared with hypophosphite of calcium heated in tube and communicating by indiarubber tube and tobacco-pipe). The bubbles come over slowly and give time for getting the pipe-bowl under the solution before another bubble comes. The last, on coming in contact with the air, ignites. This is a most beautiful experiment.

J. BOYLE, Glasgow.

Vortex Smoke-rings.

All the apparatus required to produce this effect is an empty cigar-box, one of the ends of which, being removed, is replaced by canvas tightly nailed round it. A circular hole about 1 inch in diameter is bored in the opposite end; inside the box is a saucer half filled with carbonate of ammonia,

upon which sufficient spirits of salts are poured till a dense vapour of ammonium chloride fills the box, which, upon slight rapid pressure upon canvas end of the box, is ejected from the hole and assumes beautiful circles of white smoke, which ascend and retain their shape till dissipated.

J. BOYLE, Glasgow.

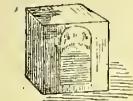
Exploding Balloons.

Small indiarubber balloons are filled with chlorine and hydrogen. Attached to each is a piece of gun-cotton with a thread, which has been steeped in sol. nitre, suspended from it. The thread is ignited before the balloons are let off, it slowly burns its way up to the gun-cotton, the burning of which explodes the gases in the balloon.

J. BOYLE, Glasgow.

The Fairy Fountain

consists of a dome-shaped tin vessel of sufficient capacity to hold 10 or 12 oz., with a small hole at top of dome to admit of chemicals and water. This opening is covered with a screw-on cap with a pin-hole in the centre, through which the gaseous water is forced in a beautiful spray a height of 15 or 20 feet as soon as the chemicals generate sufficient gas. To set the fountain in operation unscrew brass cap from nozzle, fill two-thirds full of water, add chemicals, screw on cap, and set in a large basin. The effect is very pretty when the water is tinted with any aniline colour, and the fountain placed before a light, or its utility may be illustrated by adding some strong perfume to the water before charging, when a very pretty and effective perfume spray is the result.



Cardboard box, with picture of fountain and descriptive red and black printing.

Any tinman will supply tin vessels the requisite shape for less than 6d. in quantities, the boxes $\frac{1}{2}d.$, labels $\frac{1}{2}d.$, chemicals $1\frac{1}{2}d.$, say 9d. total. Put up with a red and black label (pictorial) in a box like the above. They would sell readily at 1s. 6d. each during the winter season as a scientific novelty, and would be found quite a source of amusement for the winter evenings.

A packet each of soda crystals and acid. tart. crystals are enclosed, along with a few aniline crystals in separate papers, with instructions as to their use, and the whole put up together in black cardboard box, with labels as shown.

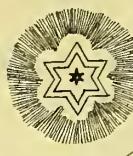
J. BOYLE, Glasgow.

The Mystic Star of Fire.

A very curious experiment is made thus:—A clean star-shaped piece of platinum foil is suspended from a brass wire twisted into shape of an M with the two ends sunk into a circular cork float (fire-proofed), sufficient in diameter to float easily in a small drinking-goblet, which is a third filled with lavender or any spirituous perfume, upon the surface of which the float with suspended star is placed. The spirit is lighted, and flaming up causes star to become red hot. When the top of goblet is covered with brass cap, perforated with ventilating holes on each side, the flames are then invisible, but when placed in a dark room the star is seen glowing a bright red, and continues so to scintillate for a considerable time, while a delightful perfume is diffused around. This

experiment is a modification of the "Instantaneous Lamp," in which spongy platinum and hydrogen are used, instead of the foil and spirit, to produce a flame. If effectively put up in black cardboard box with bottle of perfume, &c., relieved with a white and red label, to sell at 3s. 6d. or 4s. 6d., I am sure it would become a source of income, especially during the festive season.





THE MYSTIC STAR OF FIRE

being
lighted and
placed in a dark
room, a star appears
and shines brilliantly,
while a delightful perfume
is diffused around.
Complete, with full directions.

Label for outside of box.

Direction label to be affixed to bottle of perfume:—Fill the goblet one-third with the liquid, place the float with attached star upon it. Light the liquid, and when the star becomes red hot, place upon the top of goblet the brass cup, and set away in a dark place, when the star will be seen to shine with great brilliancy.

J. BOYLE, Glasgow.

Pharaoh's Serpents (Non-Poisonous).

P. pot. dichrom., 2 parts; p. nit. potass., 1 part; p. sacch. alb., 3 parts; mix. 2 oz. of this composition are divided into twelve silvered paper cones, and slightly attached with elastic to card illuminated with the following:—

GREAT SNAKES.

Directions.—Place one of the cones upon a common plate, apply a lighted match to top, when a wriggling serpent will slowly issue from the burning cone.

N.B. The chemical constituents of the above are harmless.

These cones are eagerly bought when sold at a popular price, viz. 1s. per dozen, and cause great amusement at evening parties, &c., while being free from any risk. The cones can also be fixed with gum in an upright position on the card.

J. BOYLE, Glasgow.

Referring to the experiments given over his signature (three of which were published last week), Mr. Boyle remarks:—The materials for the foregoing experiments and others of a similar character might be put up in an ornamental cardboard case, rather larger than a cigar box, with a descriptive label something like this:—

With Book of Directions.
THE BRITON'S
"NIGHT'S ENTERTAINMENT."

A cabinet containing chemicals for a series of interesting and easy experiments, suitable for fireside or evening party exhibition.

The dry chemicals, such as chlorate, &c., would be put up in 1-oz. pill boxes, and occupy the upper part of the box. The liquids, as sulphuric acid, would be put up in $\frac{1}{2}$ -oz. bottles, a small flask, or a piece of glass tubing, indiarubber tubing. They would all be appropriately labelled. The larger apparatus required, such as flasks for the preparation of hydrogen and chlorine, would be in stock and supplied upon demand. A small leaflet of directions would be enclosed.

A somewhat similar chemical case is also suggested by Mr. Archibald Paterson, 133 Govan Road, Glasgow (two of whose

contributions have been previously printed). Mr. Paterson names the following as

Contents of Case for performing Seven Attractive Chemical Experiments.

Half pint of methylated spirit, 10 grains of potassium (cut into small pieces), 2 oz. mineral naphtha, a few small pieces of sponge, 2 oz. saturated solution of carb. potass., and 2 oz. saturated solution of muriate of lime.

To Light a Candle by the Word of Command.

(A favourite experiment of Professor Frikell's.)

MATERIALS REQUIRED.—A candle, a few pieces of potassium, a phial of mineral naphtha, and a small piece of wet sponge.

DIRECTIONS.—Just before requiring a lighted candle for some purpose, place a pellet of potassium in the wick of the candle, making it fast by running a needle and white thread through the potassium and securing it to the wick. Now dip wick and potassium into the naphtha. It is then ready for use.

Hold the candlestick in the left hand, appear vexed that the candle is not lighted, quickly press the wet sponge, lifting the extended arm. Cry, "I command you to be lighted!" Touch the potassium with the wet finger, and the candle will burst into flame. **ARCHD. PATERSON.**

"The Sea on Fire."

(May be used in conjunction with the previous experiment.)

MATERIALS REQUIRED.—A soup plate, the potassium and naphtha used in No. 1 experiment, and a few paper ships.

DIRECTIONS FOR USE.—Fill the plate with water, pour a little naphtha on the water, then place the ships in position. Now make such a remark as, "I am now about to burn the fleet of King Tim Buck Too, the King of the Cannibal Islands." Throw a piece of the potassium into the plate, and you have a fleet on fire. The conflagration may be extinguished by covering with a second plate.

ARCHD. PATERSON.

To Change Two Liquids into a Solid.

Prepare a saturated solution of each carbonate of potash (salt of tartar) in water and muriate of lime by dissolving either marble chips or whiting in muriatic acid; strain the solutions and allow them to settle.

DIRECTIONS FOR USE.—Take a tablespoonful of each solution and place them in separate wineglasses. Now pour the one solution into the other, and pour the mixed solutions from glass to glass several times. The solutions will soon become a thick mass, which cannot be poured. The solutions may be put up in 2-oz. bottles. **ARCHD. PATERSON.**

The Compressed Egg; or, How did it get in?

MATERIALS.—A 1-oz. quinine bottle, or old pickle bottle, a small sponge, a phial of methylated spirit, and a hard-boiled egg (the egg to be provided by the experimenter).

DIRECTIONS FOR USE.—Show that the egg is too large to be put into the bottle. Take the shell off, and again show that it is too large. Now take a piece of sponge about the size of a nut, pour methylated spirit on the sponge, light it, and drop it into the bottle, which at once plug with the egg, which must be very hard boiled. The result is that the egg becomes much elongated, and drops into the bottle.

ARCHD. PATERSON.

"Raising a Ghost."

Burning salt in a dark room has the wonderful and startling effect of destroying colour, as the following experiment illustrates:—

MATERIALS.—A plate of salt, methylated spirit, a sheet, and a few coloured ribbons.

DIRECTIONS.—Moisten the salt with the spirit, wrap the sheet round the ghost, and a few ribbons may be placed in the hair or round the neck. Let the gas be turned down in the room. Now, if the ghost enters the room with the burning salt held high up opposite the face, it will produce a most weird and ghastly appearance to the person.

What Holds it up?

[Printed previously.]

ARCHD. PATERSON.

Another chemical case is proposed by Mr. R. Bellamy, Bedale. Many of the experiments for which Mr. Bellamy's case is suggested have already appeared.

Cabinet of Chemical Experiments

Consisting of chemicals and apparatus for experiments which can be performed by any person without the slightest danger. Highly instructive for evening entertainments, &c.

Mr. R. Bellamy suggests a small box measuring 5 in. by 8 in. by 3 in., to sell at 5s. He also suggests that a small book explaining the experiments should be sold along with it.

CONTENTS OF BOX.—1 oz. sol. argent. nit. (20 grs. to oz.), 6 oz. sol. sulphate of copper, 2 dr. sol. acid boracic, 2 dr. sol. chlorate of potash, 2 dr. sol. chloride of calcium, 2 dr. sol. nitrate strontia, 1-oz. chip box common salt, 8 oz. sol. of alum, $\frac{1}{2}$ oz. sol. sulph. magnesia, $\frac{1}{3}$ oz. sp. camphor, $\frac{1}{2}$ oz. liq. calcis saccch., 6 oz. acid sulphuric dil. (comm.), $\frac{1}{2}$ oz. sol. sulphate of iron, 4 oz. acid acet. (1 in 2), 3 oz. methylated spirit, $\frac{1}{2}$ oz. ether sulph. meth. and bent glass tube passing to bottom of the bottle inside and almost to the bottom outside, $\frac{1}{2}$ oz. carbonate of ammonia (chip box), $\frac{1}{2}$ oz. sulphate of copper, 3 oz. chlorine, $\frac{1}{2}$ oz. lycopodium (chip box), cotton wool, copper wire, iron wire, zinc, powdered blacklead in chip box, Dutch metal, test-tube, $\frac{1}{2}$ oz. beeswax, and bladder for gas, with burner. The solutions when strength is not named are saturated.

This set of materials will suffice for the experiments sent in by Mr. Bellamy, and which have already been printed, as well as for the next four.

A Mysterious Bottle.

This bottle (2 oz. or 4 oz.) is fitted with a perforated cork and bent glass tube reaching to the bottom of the bottle. Half oz. of ether is put in the bottle and filled up with water. If the bottle be put into hot water it will immediately begin to empty itself; if it is then put into cold water, it will begin to fill again.

R. BELLAMY.

To Restore Colour by Water.

If sulphate of copper be heated it loses its blue colour; but if, when cold, a drop of water be added, it immediately regains it, and gives off steam with a slight hissing sound.

R. BELLAMY.

A Spontaneous Flame.

Carefully take the cork out of the bottle of chlorine, and having fastened the Dutch metal to a piece of wire (do not crush up the Dutch metal), carefully lower it into the chlorine, when it will take fire spontaneously.

R. BELLAMY.

Artificial Lightning.

A small quantity of lycopodium put into a quill and blown through a flame will produce an artificial flash of lightning.

R. BELLAMY.

Toy Waterworks.

Mr. W. S. Harvey (Margate) sends us a working model of toy waterworks, regarding which he says: "For some years I have had a design of some sort exposed in the shop as a special attraction at Christmas, and during our busy season; and I have found it a profitable plan. The model sent is admired by old and young, rich and poor alike, and one person invariably brings another to see it. If not altogether the style of reply to your competitions I think it an appropriate time to introduce it to your notice, when so many will be looking forward for something novel for Christmas."

Mr. Harvey's model is very ingenious, and has a pretty effect when in action with a little coloured water. No description of it is given, but this Mr. Harvey will be glad to supply.

We have at last brought this long series of contributions to a conclusion. We admit with regret that it would have been better if the whole could have been published a month or six weeks earlier, so as to permit of the experiments being

prepared for Christmas; but the facts of chemistry will last, and we hope that good advantage will be taken of the collection in time for the long evenings of next year. In reply to the suggestions of many correspondents, we may say that we hope very shortly to announce a plan for the effective utilisation of the information here brought together. This is now being prepared. There are, no doubt, many other chemical experiments which might have been included, and perhaps some kind subscribers will even now favour us with further advice.

We purposely made the conditions of the competition somewhat lax, so as to bring in a good variety; but in making the awards we are bound to consider not only the style in which experiments are explained, but also their feasibility, safety, and effectiveness. The five guineas which we originally proposed to divide among competitors we have found insufficient to satisfy us in the payment of what seem to us fair prices for the work which has been done, and, as will be seen below, we have more than doubled the amount which we at first intended to distribute.

The competitor who has most fully met our requirements by ingenious titles, effective labels, and a good variety of experiments is unquestionably Mr. T. D. Wright, of Southport; we have no hesitation in placing him first in our list for awards. We consider that Mr. J. Boyle, of Glasgow, is deserving of second honours, as his experiments are carefully and neatly described, and are generally good ones. Mr. M. Buchner sends only two experiments, but these strike us as exceptionally good ones, and we name him third. Awards to other competitors are made, to the best of our judgment, as detailed below:—

	£ s. d.
Wright, T. D., 26 Chapel Street, Southport	... 2 12 6
Boyle, J., 285 Duke Street, Glasgow	... 1 11 6
Buchner, M., 149 Houndsditch...	... 1 1 0

Bellamy, R., Bedale	... ... ... 1 1 0
Freeman, F., 28 Croxton Road, West Dulwich	1 1 0
Paterson, A., 133 Govan Road, Glasgow	... 1 1 0
Wood, J. A., Eckington, Chesterfield	... 1 1 0
Croasdale, J. C., 5 Market Street, Ulverston	0 10 6
Scott, C. W. L., 5 Market Street, Ulverston	0 10 6
Stephenson, T., 48 Frederick Street, Edinburgh	0 10 6
Eley, —, c/o Mr. Arblaster, Birmingham	0 7 6
Pearson, G. E., c/o Mr. Warrior, Northallerton	0 7 6
Dean, H. J., Chesham	... ... 0 5 0
Goddard, J. G. J., c/o Mr. Bryden, Barrow	0 5 0
Thomas, E. L., 155 Praed Street	... ... 0 5 0
Wilson, W. E., 3 Buccleuch Road, Hawick	0 5 0

AT THE COUNTER.

IN U.S.A.—They were taking a smile behind the prescription case in a local option town not far away, and, as usual, drank out of the graduate. "Hay-seed," not being expert in the manner of draining the last drops, poured about a third of the contents down the outside of his throat, and remarked to his friend as they left the store, "Darn them spatulas, I never could drink out of 'em nohow."—*National Druggist*.

* *

A NUMBER of correspondents have sent us batches of curiosities from among the orders received by them. There is a great deal of sameness about these, and mere bad spelling or writing is rather sad than comic:—"Often Puzzled" sends us a list, some of which, we think, should be credited rather to his ingenuity than to the ignorance of his customers. "Clear Soot" for creasote, "grantantantur" for cream of tartar, "French pianos" for Frangipanni, and "live under water"

for lavender water are among the specimens from this series. A Worcester chemist sends the originals of "salve amatic salve amoneoc," and "i a din a potash," which need no interpretation. A Stroud chemist reports a customer asking for a pot of "electricity of senna." "Bolatiol salts" is asked for from "A. H." Mr. Lawrence (Oban) is asked for "a penetrer bitter Alloueys to spane a baby." An Oakham customer sends for "3 penny weigh of oyl of yarmoms." The following prescription was duly filled, but we cannot now trace its locality:—"1 Penney Wirth hiles of Dog, 1 Penney wirth hile of Brick, 1 penney wirth wood nafter, 1 Penney wirth of coff Pils, and head and stoneks Pils." "Flour of mack nesie," "Glard extract," "quine & liorn mixture" are among a set sent us from "the Modern Athens." A Birningham chemist sends us a block of wood on which is written in pencil "ope Dill Dock & open."

* *

THE following occurred in the North of London:—Scene: A pharmacy; a sage-looking pharmacist behind the counter. Enter a house painter carrying his pots, brushes, &c. Painter: I say, guv'nor, make us up summut for the diarrhoea; 'ad it about a week. Pharmacist: Yes, certainly (proceeds to mix the medicine). Painter (watching every bottle as it is taken down): I say, put plenty o' dryers in, guv'nor.

* *

OLD LADY (suffering from hiccoughs, to drug clerk): "Young—man, I want to—get some liquor ____" Clerk (hastily): "Can't do it, madam. You've had enough alrea ____" Old Lady (frigidly): "Some liquorice."

* *

A LOVE-SICK CUSTOMER.—"S." writes from Aliwal North, on the Orange River, Cape Colony:—I enclose copy of a note received from a semi-educated Dutch farmer residing in the Orange Free State: "Dear Sir,—Can't you please tell me what must I do if I loves a girl and their parents don't want let me marry her? Can't you give me something to make them loves me?—I remain, yours truly, ____" The gentleman was supplied with a 3s. bottle of perfume. I have not heard the result as yet, and not likely to either.

* *

SOCIAL ECONOMY.—The wife of a northern merchant prince called on a subscriber a few days since and laid on his counter two soiled bottles of Browne's chlorodyne boldly marked 10½d. "These," said the lady, "are two bottles of chlorodyne which I got some time ago from the Professional Supply Store in Dundee, and having no further use for them I want you to sell them for me and credit my account." The chlorodyne, we understand, is still in stock, and likely to be; and the lady's account will be credited with the value when the bottles are sold—but not till then.

* *

CUTTING PRICES.—A citizen stepped into an up-town drug-store and called for a couple of pills, which he swallowed. "How much?" he asked. "Fifty cents, sir." "Fifty cents? Why, the druggist on the block below never charged me more than five." "Then I'll make 'em four. I'll drive that man out of business if I have to sell goods at cost."

* *

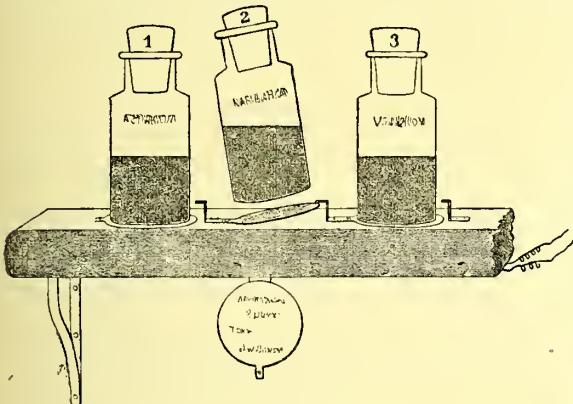
MISS TERRY IN A CHEMIST'S SHOP.—A London correspondent says:—A funny story reaches me in reference to Miss Ellen Terry, the well-known actress, who is, I am happy to say, rapidly recovering her health. Miss Terry is in the habit of making purchases of cosmetics and other articles at the shop of a leading West-end chemist, and she has amused the assistants by the truly feminine curiosity which she has displayed in reference to the different articles exhibited on the counter. She is anxious to know the use and effect of every preparation of the chemist's skill, and is never content until her inquiries have elicited full explanation. The other day the actress, being in the shop, picked up a small phial, and put the usual question concerning its use. "That," replied the attendant, "will make you blush if you smell it." Miss Terry at once unscrewed the stopper, with the remark, "Well, I have not blushed for years; I'll try it." And so she did, and applying the bottle to her nose, produced tears as well as blushes, in quantity sufficient to gratify the most ardent pittite who ever entered the Lyceum.



AN ELECTRIC POISON-SHELF.

MR. G. E. WORTHEN, of West Newton, Mass., U.S., has invented a poison-shelf the description and illustration of which we copy from the *Druggists' Circular*.

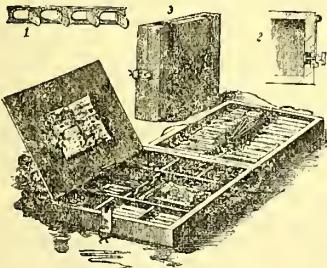
The shelf can be made of any size or shape, for any number of bottles, and of any material desired, to correspond with fixtures of store. It can be located in any convenient corner, closet, or as a shelf at prescription counter. The mechanism



is simple. An electric battery is connected with the shelf by a silk insulated wire, which wire is concealed from view as soon as it enters the shelf. The bottles rest on thin metal discs, which close the electric circuit as soon as a bottle is removed, causing an alarm bell to ring until the bottle is replaced, and at the same time exposing a plainly-printed card, giving the name of poison, the dose, and antidote. Mr. Worthen, it is added, intends to give his invention to the public.

A COMPACT MEDICINE-CASE.

THE *Scientific American* recently published particulars and an illustration of a medicine-case which has been patented by Mr. T. J. Hutton, Fergus Falls, and which we here re-



produce. Fig. 1 is a perspective view of a piece of a struck-up metal strip for holding the lower ends of the vials in position, and fig. 2 is a vertical section of the front end part of the chest when closed, illustrating the fastenings, figs. 3 and 4 showing the case closed and open respectively.

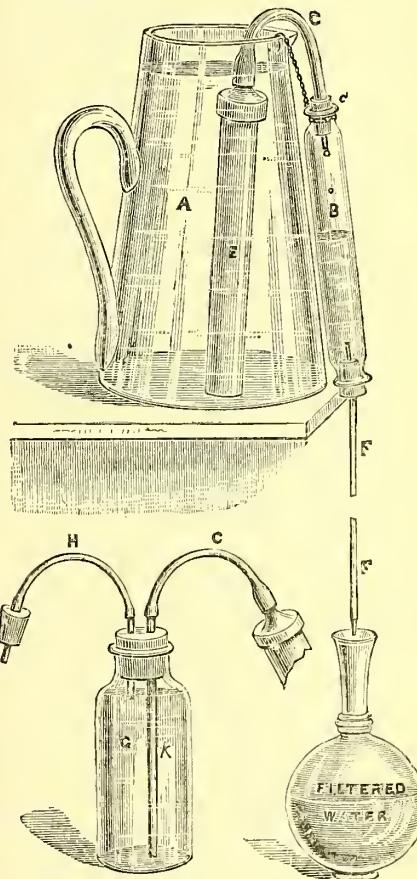
The case is composed of upper and lower main sections hinged together at one end, the lower section being principally divided into two longitudinal vial-holding compartments, one above the other, with a central compartment, which can be used to hold a drop measure, surgical needle,

brushes, &c. The vial-holding sections are arranged to hold vials of different sizes, the vials being securely held in pockets, but so that the labels indicating their contents can be easily read. The upper section of the chest is divided by transverse partitions and a longitudinal partition, to give compartments for holding plasters, bandage strips, &c.; but the partitions are shallow, to allow room for a handbook of directions attached to a cover which fits over this compartment. When the chest is fully thrown open, and the lid set inclining in its open position, all the contents are exposed to view, and there is no necessity to remove some of them to get at the others.

THE PASTUER "UNIVERSAL" FILTER.

THE Chamberland-Pasteur Filter Company have brought out a new adaptation of the filter which we have previously described. The filtering-medium is a specially-prepared porcelain in the form of tubes or candles closed at one end. The new adaptation takes advantage of the siphon principle, so that the filtration of water may take place in any circumstances.

In operation a vessel of any kind (*A*) is filled with unfiltered water, and the flask *B* is charged with filtered or boiled water,



and is connected by the syphoning tube C with the "candle" E, which is then immersed for about fifteen minutes until filled. While this is going on the end of the delivery tube F is kept above the level of the top. When this is lowered part of the water runs from the flask, leaving a partial vacuum which causes increased pressure, and consequently rapid filtration.

We previously stated that this filtering-medium is well

adapted for filtering tinctures and the like. The makers now propose to adopt the principle of upward filtration, whereby filtration may not only be more rapid, but viscous fluids may readily be operated on. In this case the flask B is charged with the tincture in a filtered condition. This may be obtained by interposing an empty flask as at C. The ordinary flask B is charged with any kind of water, and connected by a tube H with the flask C, the glass tube K being connected with C, as in the figure. In this way the vacuum is formed in the flask C which fills with the filtered liquid. The water in B is then thrown out and replaced by the contents of C; when the former is connected with C and the filter E the process of filtration proceeds. A Chamberland-Pasteur candle can thus take the place of the funnel and filter illustrated in fig. 49 of our DIARY, with the advantage that after brushing the filter is again ready for work.

BLACK WOOL-DYE.

MESSRS. E. CRAWSHAW & Co. have succeeded in producing a black aniline dye which, on the addition of water and a small percentage of acid, makes a very intense black dye-bath. The colour is readily and uniformly taken up by woollen fabrics, and the fact that it requires no special method of preparation should make the dye a public favourite. We have put the dye to practical test, and can vouch for the facility with which it may be used. The makers put up the dye in the well-known 1d. packets, and in other forms.

PEPSIN AND COMMERCIAL PEPSINS.

BY GEORGE A. GRIERSON.

THE author in his introductory remarks referred to the more prominent theories and digestion, and to previous work on the digestive ferments.

The Composition and Digestive Power of Commercial Pepsins.—As it was only necessary to arrive at their composition approximately, the following method was adopted. The samples were first tested as to solubility in water and acidulated water. Ten grains of each were mixed with 1 oz. of water, and a like quantity with 1 oz. of water to which had been added 8 minims acid, hydrochlor., P.B. The mixtures were occasionally shaken for twelve hours, placed on counterbalanced filters, the liquid allowed to drain off, and the residue dried and weighed. The general results arrived at by this process were then specialised by testing with iodine and Fehling's solution respectively, and by microscopic examination. To test the digestive power of pepsin, several methods have been recommended. One writer suggests fibrin; another, desiccated and powdered albumen; but the favourite method seems to be that in which hard-boiled white of egg is the substance acted upon, and this was the one which was chosen. The first method was discarded because results obtained by it could not well be compared with official standards; the second, because, apart from the difficulty of powdering the desiccated albumen, it appeared to have lost to a great extent its solubility in peptic solutions. Had this method been practicable, it would have yielded mathematically accurate results, which, however, were not sought for. Two grains of each sample were placed in a 12-oz. earthenware jar with 8 oz. water, 1 drachm acid, hydrochlor. P.B., and 500 grains hard-boiled white of egg which had previously been passed through a hair sieve. Before the pepsin was added, however, the jars with the water, acid, and white of egg were all raised to a temperature of 110° Fahr. by means of a water-bath. After adding the pepsin the temperature was gradually raised to 130° Fahr., the mixtures being constantly stirred. This part of the process took half an hour, and the temperature was maintained at 130° for another half-hour, so that the whole process lasted one hour. The undissolved albumen was then thrown on muslin and allowed to dry in the air for about twenty-

four hours, and its weight, subtracted from 500 grains, gave approximately the amount dissolved. The figures obtained simply show the solvent power of the pepsins, not their absolute peptonising power; but for practical purposes this is quite sufficient. It should also be noted that it is always advisable to use a larger quantity of albumen than the sample is expected to dissolve, as in the initial stages of the process the pepsin is more active than in the later—that is to say, that a pepsin which, when allowed 500 grains of albumen, dissolved 200, might not dissolve 100 if only started with that amount.

In the following table are embodied the results of the different tests employed:

No. of Sample	Quantity Dissolved from 10 grains Macerated in		Difference	Albumen Dissolved by 2 grains	Chemical and Microscopical Examination
	Acidulated Water	Water			
1	grains 7	grains 3	grains 4	grains 500	Maceration in ether removes 10 per cent. fatty matter; microscopical examination reveals presence of columnar epithelium in quantity; no starch; no milk-sugar
2	7	4	3	340	Blue with iodine; microscopical examination shows starch in small quantity and columnar epithelium; no milk-sugar
3	6	10	4	370	Fehling's solution and microscopical examination show milk-sugar
4	4½	3	1½	100	Blue with iodine; microscopical examination shows starch; no milk-sugar
5	4	0	4	130	Blue with iodine; microscope shows starch in large quantity
6	8	4	4	400	Microscope shows starch in small quantity, and epithelium
7	7½	6½	1	80	No starch; Fehling's solution and microscopical examination show milk-sugar
8	8	2	6	500	No starch; no milk-sugar; microscopical examination of residue from acid shows epithelium
9	5	3½	1½	380	No milk-sugar; blue with iodine; microscopical examination shows starch
10	10	10	0	120	No starch; Fehling's solution shows milk-sugar; microscopical examination shows this to be present in quantity
11	3	1	2	140	No starch; no milk-sugar; microscopical examination shows it to be almost entirely composed of nucleated cells

Some instruction may be derived from a study of the connection between the figures in the different columns of this table. In all cases in which the proteolytic power is high, the difference between the solubility in water and in acid is comparatively great. This is what we might naturally expect if we grant that pure pepsin is more soluble in acidulated than in ordinary water, and I certainly think all the evidence points in this direction. Take, for instance, the two most active pepsins—Nos. 1 and 8. Note first that they contain no starch, the presence of which would lead to error. It will be found that 7 grains of one and 8 grains of the other are soluble in the acid medium, while only a very small proportion is soluble in water. In order further to confirm this greater solubility of pepsin in acid than in neutral media, two pigs' stomachs were macerated for twenty-four hours,

with occasional stirring, one in 6 oz. of water, and the other in 6 oz. of water with the addition of 2 drachms hydrochloric acid. The action of 1 drachm of each was then tried on 500 grains of coagulated albumen, each mixture being, of course, acidulated. The neutral sample dissolved 180 grains, and the acid one 220 grains; but the neutral sample contained a considerable amount of mucus in suspension, which, if it had been removed by filtration, would have very much lowered the recorded power.

Taking the samples of lowest proteolytic power, two of them—Nos. 7 and 10—are very soluble in water, the bulk of them being, in fact, milk-sugar; two more—Nos. 4 and 5—are very insoluble, both in water and acidulated water, the bulk of them being starchy matter. It should be stated that No. 10 is not sold as a pure pepsin, nor even as "Pepsin, B.P." but as a digestive powder containing, in their natural condition, the ferments and acids of the digestive organs. No. 8 is in scales. No. 11 purports to be made from the stomach of the fowl, but I have not been able to come to any definite conclusion as to its source from its appearance under the microscope.

The ridiculously low standard for pepsin set down in the Pharmacopoeia has almost made the term "B.P. Pepsin" a by-word for any pepsin of inferior quality. It is the aim of the Pharmacopoeia, I take it, to exclude adulterated articles, and make its definitions apply only to the best of everything. If this is so, and a pepsin can be found to dissolve 500 grains of albumen under given conditions, surely that cannot be a genuine article which only dissolves one-fifth of this! It should be noted, however, that the time taken in my experiments is double that allowed by the Pharmacopoeia. I think the longer time gives more uniform results. The experiments on solubility have an obvious bearing on another point in the official test. This says that pepsin should be very little soluble in water, which, of course, excludes all samples containing a large proportion of sugar of milk, but it is rendered valueless when we find that starch is frequently used. This difficulty would be got rid of by adding, "three-fifths of it should be soluble in water acidulated with hydrochloric acid." I would not exclude starchy matter entirely, because it may sometimes prove useful in rendering the drying process simpler and in making the resultant powder less hygroscopic. That the presence of an inert powder, however, is not absolutely necessary is evident from the fact that the two best pepsins contain neither starch nor sugar.

Bearing of experimental Results on the best Method for the Preparation of Pepsin.—The presence of epithelium in the best examples renders it evident that they are prepared in some way direct from the stomach, without undergoing any previous solution and filtration. Whether prepared strictly according to the official process (Beale's) or by some modification of it, whereby the impracticable method of scraping is done away with, there is no evidence to show. Much fun has been poked at this process, the best example I remember being a humorous article, with illustrations, which appeared in THE CHEMIST AND DRUGGIST some little time since, and I must say that, previous to undertaking this research, I was exceedingly sceptical about it ever being used; but there is no gainsaying facts. From the fact that pepsin is so much more soluble in acid than in neutral media, it is difficult to see how Petit's process* is applicable on a commercial scale. Scheffer's process† has not in my hands yielded satisfactory results; salt does not seem to throw out all the pepsin in an acid solution.

Liquid Pepsins.—A report on commercial pepsins would obviously be incomplete without the inclusion of the liquid variety. Nine samples of this kind were examined. The method of testing was the same as for the solid, 1 drachm of the fluid being substituted for the 2 grains of the latter employed. The following shows the result:—

No. of Sample	Albumen Dissolved				
	Grains				
1	500				
2	500				
3	500				
4	300				
5	70				
6	140				
7	70				
8	110				
9	100				

Nos. 1 to 4 were evidently acidulated glycerine extracts, the last of them being sold as a mixture of pepsin and pancreatin. No. 5 was sold as a compound wine containing pancreatin as well as pepsin and the natural acids of the stomach. Its action on albumen does not say much for the activity of ferments in their natural condition. It also contained iron as an impurity, probably the result of being made in an enamelled pan which had seen better days. No. 6 was also an acidulated glycerine extract; considering the menstruum, it appears as if, in its preparation, philanthropic motives had been lost sight of in commercial. Nos. 7, 8, and 9 were ordinary wines, No. 9 being a foreign make of some repute.

It appears from these data that wines are much inferior to glycerine preparations in digestive power. It should be borne in mind, however, that they are given in larger doses. The great activity of the first four samples goes a long way towards disproving the statement made by Dr. Murrell * that liquid preparations of pepsin are unsatisfactory. Indeed, the figures given for the best liquid pepsin do not represent their total solvent power (although this also holds good for the best solid pepsins). If longer time were given more albumen would be dissolved, but in comparative experiments this is necessarily of no moment. I do not think the want of activity in pepsin wines is due to the action of the alcohol on the ferment in the finished preparation. Although a contrary statement has frequently been made, it would appear that the presence of alcohol, even in large proportion, does not destroy the peptic ferment. The weakness in the wines may, I think, be traced to one or all of three causes; either the crude material has been deficient or faulty, or the hardening effect of alcohol on animal tissue has prevented the menstruum exerting its solvent action, or there has not been sufficient acid in the menstruum. It is very probable that in the majority of cases each of these causes has some influence.

In conclusion, I cannot help expressing the belief that pepsin is destined to take a more important place in the therapeutics of the future than it has done in the past. The only elements necessary for its success are, in the words of Dr. Murrell, first to test your pepsin, and then to give plenty of it. Its value as a palliative cannot be doubted, and palliative medicines, although not acting as specifics on the diseases they are intended to combat, tend to restore general normal conditions by diminishing the friction caused by local abnormalities.

TURNING AN HONEST PENNY.—"Ah," said one little girl to another, "my mamma gives me a penny every morning for taking a spoonful of cod-liver oil?" "And what do you buy with the penny?" eagerly asked the second girl, in a tone not devoid of envy. "Oh," was the reply, "I do not spend it at all; mamma puts it away for me every day to buy more cod-liver oil with!"

A PRECAUTION.—A dentist advised a man to have a tooth taken out, assuring him that if he inhaled gas he would feel no pain. "What is the effect of the gas?" "It makes you insensible," said the dentist, "and you don't know what takes place." The man took out his money. "Oh, never mind the fee until afterwards," remarked the dentist. "I wasn't thinking of that," said the patient; "I only wanted to see how much money I had."

AN EXAMINATION PUZZLE.—A correspondent of the *Chemical News* states that the following question was set at an examination in one of the Government Departments upon a laboratory course on the analysis of substances containing only one metal and one acid. He asks if anyone can say how *x* could have misconducted itself in the manner stated. The question is:—"A substance, *x*, dissolves in water, and the solution is alkaline to test-paper; it gives no precipitate with hydrochloric acid and sulphurated hydrogen, but a flocculent colourless precipitate with ammonia, which is unaltered by ammonium sulphide. The filtrate from this precipitate gives no further precipitate with ammonium carbonate, sodium phosphate, or platinum chloride. What substances behave like *x*, and how can you distinguish between them?"

THE CHEMIST AND DRUGGIST.

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COMPRESSED CHARCOAL FILTERS.**

See Advertisement, page 17.

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EDITORIAL NOTES.

TINCTURE OF OPIUM AND PAREGORIC.

At Sheffield last week two cases of infringement of the Sale of Food and Drugs Act were brought before the Stipendiary, and the results were duly reported in this journal. In one case a chemist was prosecuted for selling tincture of opium which, according to the analyst's report, contained only one-third of the official quantity of opium. In the other case a grocer was prosecuted for selling paregoric elixir which contained no opium at all. The magistrate dismissed both cases; the first because he considered any preparation containing opium and alcohol to be “tincture of opium,” and the second on the ground that any preparation of a soothing nature might be legally termed “paregoric.” We last week fully commented upon these decisions, and pointed out how disastrous the result would be to the public if the principle laid down by the Sheffield magistrate came to be acted upon in the drug trade. The Sale of Food and Drugs Act does not specifically take the British Pharmacopoeia as its standard for drugs, but in cases which have hitherto been decided it has been so recognised, because it is the standard followed by the drug trade throughout the kingdom. There have been notable exceptions, for example, in the cases of milk of sulphur and sweet spirits of nitre, in which it has been proved that the articles which were preferred by the public were distinctly different from those afforded by pharmacopeial processes, and that the preferred preparations had been in use for generations before the Pharmacopoeia was published. In the Sheffield cases no such defence was made, and none would have been forthcoming had it been sought for. Tincture of opium, as prepared by the Pharmacopoeia formula, has been sold retail to the public for many generations, and no sane man would dispute the necessity for preparing it according to a common standard. That is a point which seems to require no argument, yet the Sheffield magistrate decides that anything containing opium and alcohol is “tincture of opium.” Such technical evidence as was brought before him was to the contrary. The seventh clause of the Act states that “no person shall sell any . . . compounded drug which is not composed of ingredients in accordance with the demands of the purchaser,” &c. Presumably the magistrate does not consider that this provision extends to the quantity of the drug in the compound, but the fact that certain drugs are compounded necessarily implies that they are compounded according to a formula commonly recognised.

The dismissal of the paregoric case raises a quite different set of considerations. We are inclined to be grateful to a magistrate who requires strict proof before he assumes the identity of a popular synonym with an official preparation. In the cases of milk of sulphur or sweet spirits of nitre this identity was far too readily assumed by a good many analysts and by some magistrates, and it had to be shown that there was reason for distinguishing between milk of sulphur and precipitated sulphur, and between sweet spirits of nitre and spirit of nitrous ether. But we cannot see that any analogous distinction can reasonably be made between paregoric and compound tincture of camphor of the British Pharmacopœia, while overwhelming evidence could be brought to show that by paregoric is everywhere understood a preparation with opium as an essential ingredient. Seven years ago there were several similar cases in the Sheffield district, and in all but one case convictions were recorded. In the case which was dismissed it was proved that the compound was sold as paregoric substitute, although not labelled as such; and the circumstances were altogether of a nature which required the defendant to get the benefit of the doubt. The case now before us presents no extenuating circumstances. Paregoric elixir was asked for, and paregoric elixir, guaranteed free from opium, was supplied. Again it was alleged for the prosecution that the preparation was wanting in the most important ingredient, but the magistrate, on the strength of a cursory reference to a dictionary, decided that there was no case. The word paregoric is derived from the Greek *par̄gorikos*—soothing; this again is derived from *par̄gorēto*, to console, mitigate, or soothe, which has for its roots *para*, aside, and *agorēto*, to speak in an assembly. According to dictionaries, paregoric literally means a medicine which mitigates pain, while paregoric elixir is a camphorated tincture of opium, flavoured with aromatics—clearly the compound tincture of camphor of the British Pharmacopœia. Had the magisterial dictionary been a good one, and carefully consulted, the decision might have been different. The British Pharmacopœia does not give the synonym paregoric elixir for *tinctura camphora composita*, but the German Pharmacopœia (1st edition), Greek, Russian, Norwegian, and others give it. As far back as 1746 it was named “elixir paregoricum” in the London Pharmacopœia. It was so named as a synonym in the Dublin Pharmacopœia, and the Edinburgh Pharmacopœia, 1817, gives it as “vulgo, elixir paregoricum anglorum,” to distinguish it from *tinctura opii ammoniata*, commonly known as Scotch paregoric. Christison says of it: “The English paregoric of common speech is one of the compound tinctures much used in cough, in which camphor, together with aromatics, is used to counteract the debilitating action of opium in the stomach.” In the fourth edition of Pereira’s “Materia Medica” it is significantly stated that compound tincture of camphor “should be regarded as a pharmaceutical preparation of opium rather than of camphor.” It is well known that *tinctura opii camphorata* was the name under which it occurred in the Dublin and Edinburgh Pharmacopœias, and the English name was only adopted in the British Pharmacopœia in deference to an objection that the other name might alarm patients who noticed it in prescriptions. It is further stated by Pereira that the tincture is well known as paregoric elixir, and by the public as paregoric. It is also noteworthy that the Board of Trade directs the compound tincture of camphor to be supplied for paregoric elixir for use on board ship. There is no doubt, therefore, that all authorities agree as to what paregoric or paregoric elixir is, and it is only right that we should claim that a case which affects all pharmacists, and more especially the public, should not be finally decided without due regard to recognised authorities. More-

over, in deciding the case the magistrate failed to take into account the fact that the preparation sold was purposely prepared so that the retailer might not come under the influence of the Pharmacy Act, by which paregoric elixir is regarded as a substance which may only be sold by persons specially qualified. There is no legal objection to selling such a compound as a “soother”; but there is a source of danger in selling it as paregoric elixir, for the dose of it must be very large, and if that dose were taken as a guide for the pharmacopœial preparation the results would probably be fatal.

PRESCRIBING BY CHEMISTS.

Two cases have been lately investigated by coroners in which prescribing by chemists has preceded, though it has not necessarily occasioned, the deaths of patients. The proceedings of the respective chemists have been very different and entirely typical. One, a Mr. Homer, of Bedworth, was “called in” to attend a case of quinsy, and “visited the child daily at her home.” He “assured the jury that the deceased received every attention and care at his hands.” There was no evidence against this medical attendant’s skill or attention. It appeared that he had served a five years’ apprenticeship to a qualified practitioner and had attended the necessary college lectures. He had simply failed to satisfy some pedantic board of examiners of his all-round competence. He was, in fact, rather an undergraduate medical man than an ambitious chemist and druggist. Had he been an assistant to a medical practitioner, the death certificate would have been signed by his employer and the result would have been the most perfect matter of course. Public attention was called to his case because it happened that he had drifted into the business of a chemist and druggist before the passing of the Pharmacy Act. The coroner told him, quite correctly we can have no doubt, that he had incurred liability to a penalty of 20*l.*; but both he and the jury assumed judicial functions which were certainly not theirs when they waived the penalty on condition that Mr. Homer agreed to avoid prescribing in the future.

The other case is reported from Cheltenham, and was curiously similar to the Bedworth inquest in its conclusion, though the circumstances on which the coroner based his remarks were by no means analogous to those just alluded to. At Cheltenham a gentleman called on Mr. Woodward, a chemist, “and said his servant had gone to bed with a very bad cold and difficulty of breathing,” and asked for some medicine for her. The medicine given seemed to do the girl good, and medical evidence went to show that it was “applicable to the disease in its primary stages.” More was sent for, and the girl seemed to be getting over her attack when she suddenly collapsed and died. These occurrences which might happen to any chemist, but the coroner informed Mr. Woodward with the utmost confidence that he is liable to a penalty of 20*l.* every time he prescribes, and on the strength of that assertion obtained from the chemist an assurance that such “a misdemeanour” should not happen again. But the coroner’s interpretation of the law is very questionable. There can be no mistake about the statute to which he referred. There is no other law than the Apothecaries Act of 1815 which renders medical practice in any sense penal, and that Act specifies that a penalty of 20*l.* may be imposed on “any person who shall act or practise as an apothecary without having obtained a certificate under the Act.” The definition of “acting as an apothecary” has troubled a good many eminent judges, but none of them have settled it in the off-hand style of the Cheltenham coroner. It is not so certain as he seems to think that prescribing in

the manner reported is "acting as an apothecary." The chemist did not attend the case in any sense; he did not diagnose the symptoms; his customer asked him for medicine for a bad cold, and he gave what he thought was best. It may be that the conversation between the chemist and his customer went to the length of "practising as an apothecary" on the part of the former; of that we cannot judge; but we very much doubt the soundness of the claim that a chemist infringes the Apothecaries Act every time he gives a medicinal preparation for a cold, a toothache, or an attack of indigestion. It is at least open to argument that such dealings come within the scope of the 28th section of the Apothecaries Act, which gives chemists the right to carry on their business in dispensing and vending drugs, medicines, and medicinal compounds as fully and amply as the same trade was carried on before the passing of the Act. The fact of the illness in the case having been a very severe one makes no difference legally. It was not legally the business of the chemist to tell his customer to call in a medical man.

Chemists as a body can have no desire to support those among their number who assume a dignity to which they have no right; visiting and attending cases of illness is not within the scope of a pharmacist's business. But selling medicines for the various complaints to which humanity is heir is the daily occupation of chemists and druggists. Let apothecaries do all they can to persuade the public to send for them whenever anything goes wrong; but the public meant in 1815, and mean still, to go to the chemists' shops as freely as they like for the remedies sold there. Baron Pollock said in the case of the Apothecaries' Society *v.* Shepperley that a chemist might enter into conversation with his customer respecting the medicines which the latter intends to buy; how far he may go in advising respecting the selection and administration of such medicines is a point which has not been rendered clear by the consensus of judicial opinion; but certain it is that if the course taken by Mr. Woodward be authoritatively declared illegal, medical prosecutors have a large field, white to the harvest, before them.

BORAX ADVANCING.

DURING the last few weeks borax has slightly revived from the condition of extreme depression which has lately characterised it. A large business, partly, of course, speculative, has been transacted, and the present official quotation for the refined article is given as from 28*l.* to 30*l.* per ton, an improvement of about 10 or 15 per cent. as compared with the quotations of last autumn.

During the years 1882 and 1883 refined borax was steadily quoted at from 58*l.* to 63*l.* per ton, a few English refiners having the field pretty well to themselves. Towards the close of 1883, however, California became an important competitor in the English market; so important, in fact, as to be a cause of serious annoyance to the English makers. It was therefore resolved to crush the intruder by heroic measures, and accordingly, at the beginning of 1884, the English refiners, acting in concert, suddenly lowered their price from 60*l.* to 42*l.* per ton. For a time this proceeding appears to have been effective, and the American importers were seriously crippled; but gradually they looked up again, undersold British manufacturers in their turn, and thus contributed their quota to the fierce competition which has gradually reduced the value of borax until, about three months ago, it fell as low as 24*l.* or 25*l.* per ton. The production of borax in California and Nevada is very large, amounting, it is said, to 7,000,000 lbs. in 1884 and 8,000,000 lbs. in 1885.

But the low condition of the borax market is only partly

accounted for by American competition. The increased production in Germany of refined borax from South American borates has also had its effect upon the market, and the decline has been further aided by differences between the principal British refiners and the Italian exporters of boracic acid. This acid, obtained from the suffioni or fumaroles in Tuscany, and containing, it is said, about 80 per cent. borax, was formerly shipped exclusively to this country, where it was refined to a very high degree of purity, as much as 99.99 per cent. in some instances. But the principal British refiners of Tuscanian boric acid got into some dispute with their Italian suppliers, with the result that the latter commenced refining on their own account, and, moreover, offered their crude material to any comer. Germany largely profited under these conditions, and now takes considerable quantities of the Italian acid.

Borax is also largely prepared from the native borax or tincal found in Asia, and from South American, European, and Turkish boracites. In Asia Minor three boracite mines are now, so far as we can learn, actually being worked, their produce being exported partly to this country and partly to the Continent. This Turkish boracite is found in pockets of very varying dimensions, embedded in a soil of gypsum. Several years ago this mineral, it is said, was exported from Asia Minor under a fancy name, and imported into the country, where it was refined under another misleading appellation, the transaction being evidently kept as secret as possible. The whole quantity consigned to England is regularly bought up by one or two refiners, and it is seldom met with in the open market, although occasionally important lots have been obtainable by outsiders. Two of the Asian mines were formerly worked by different companies, which amalgamated, but we understand that latterly a third mine has been opened by an independent concern.

The unprecedentedly low price of borax has had the effect of greatly extending the uses of the article, and the latest application of boric acid in the curing of fish will, it is thought, cause a further and large increase in the demand. On the other hand there is fierce competition between the producers, and the supply of refining material is practically unlimited. Parties who follow the market closely are of opinion that the article is at present in a fairly sound position; and while they are not sanguine of a recurrence of the good old times, it is thought that a fresh decline to last autumn's level is, to say the least, improbable. The British refiners of borax are wealthy firms, who are not under the necessity of selling their produce in order to raise cash, and second-hand holders, who frequently spoil the market, are stated to be very short of supplies. At the same time it should be borne in mind that such calculations, for obvious reasons, are to a great extent guesswork, and that in the borax market, as in others, the saying is frequently verified that it is the unforeseen which happens.

THE IMPERIAL INSTITUTE.

THE report of the Committee appointed by the Prince of Wales to prepare a scheme for this Institute, which it is proposed to found as the nation's memorial of the Queen's jubilee, has been published. The Committee was presided over by Lord Herschell, and associated with him were several noble lords, a few scientists, such as Sir Lyon Playfair and Sir Frederick Abel, and representatives of city and commercial interests. The constitution of the Committee has been objected to because of its supposed select nature, and because most of its members have no practical acquaintance with the formation or working of museums. How far these objections are reasonable will appear from a consideration of

the report; but, it should be observed, the Committee is merely a preliminary one, and the members thereof, in addition to what experience they may have in colonial and industrial matters, form a most respectable figurehead for a scheme whose existence will depend on public subscription.

It will be recollect that the advocates of a commercial museum for the City of London were desirous that the Institute should not get under the influence of the South Kensington ring, and particularly that a central situation should be secured for the building. The Committee have, however, taken a very broad idea of what is possible for an Imperial Institute, and have determined that, so far as its localisation is concerned, they must be guided by circumstances; further, that the scope of the Institute should embrace commerce in other respects than the concrete—in other words, the Committee have developed the original idea of a permanent representation of the resources and progress of the colonies and India, so that the suggested Institute may also comprehend a representation of the United Kingdom, and they propose to give it the title of "The Imperial Institute of the United Kingdom, the Colonies, and India." The most important proposal by the Committee, and that one which will tend to give the Institute a national character, is that the Institute should be in one sense a distributing centre, from which collections of specimens may be sent out for temporary or permanent exhibition in commercial centres. This feature of the scheme will of course meet the objection to the localisation of the Institute, which is to be South Kensington, while the provinces may be expected to take more interest in a concern which is not got up for the gratification of West-End Londoners exclusively.

The object of the Colonial and Indian Section will be, it is stated, to illustrate the great commercial and industrial resources of those sections of the British Empire, and to spread a knowledge of their progress and social condition. In addition to collecting and displaying natural and manufactured products from the different countries and circulating typical collections throughout the United Kingdom, it is proposed to collect and diffuse the fullest information in regard to the industrial and material condition of the colonies, as well as other information which may be useful to intending emigrants; to do, in fact, what the present Emigration Department of the Government is expected to. It is also proposed to form colonial and Indian libraries and news and intelligence rooms which should be readily accessible to all. Provision for conferences and for meetings of societies related to each section is also suggested, and the exhibition character, which appears to be inevitably associated with the favoured locality, is provided for in a proposal to hold occasional special exhibitions of colonial and Indian produce and manufactures. At one time a particular colony or portion of the Empire might desire to show its progress; at another a general comparison of particular industries might be useful.

The United Kingdom section is proposed, we presume, to meet the objections which have been made to the special advantages which colonial would have over home manufacturers in the way of exhibiting their products. Here it is desired to illustrate the development during Her Majesty's reign, and the present condition, of the natural and manufactured products of the United Kingdom, and to afford such stimulus and knowledge as will lead to further development. Collections of natural products and illustrations of manufactured products are suggested, and care is to be taken to replace obsolete forms with improvements, except when the old forms appear to have permanent value. A library containing standard works and reports on all subjects of trade and commerce, and probably also of inventions, is to be formed, and supplemented by reading and conference rooms,

the special feature of which would be a fully-equipped map-room (geographical and geological), and the use of the conference rooms by the Chamber of Commerce and other similar bodies. To this section would also fall the work necessary for the promotion of commercial museums in the City of London and in the commercial centres of the provinces. Occasional exhibitions such as are provided for in the Colonial and Indian section may also be provided for.

The selection of a site appears to have had the Committee's careful consideration, but they could have no difficulty in arriving at a decision on that matter. There was at their disposal the property at South Kensington, belonging to the Commissioners of the Exhibition of 1851, which they may get for nothing, compared with half-a-dozen sites which might be got nearer the City, but which varied in price from £125,000 to £668,000. The financial reasons, added to other considerations of convenience, made it almost inevitable that the South Kensington site should be selected.

The scheme altogether is a pleasing one—pleasing because of its broadness. Its breadth, however, is its weak point; the Institute, as it is proposed, seems capable of rendering great services, but these are general and, in a sense, vague. There is no pressing demand for any one of its objects, and the obvious desire to be fair to the various colonies all round is likely, in practice, to ensure coldness from each. So, too, the laudable attempt to level down what might be too prominent features in the scheme is quite as likely to militate against as for its success. A museum, or a show, or a market, or an emigration agency might answer if pursued singly; but a combination of all with none predominating is in danger of failure from its comprehensiveness. If, however, the nation should see fit to provide the cash there are many ways in which this might be spent worse, and anything which tends to keep the great English-speaking race together socially and commercially is a factor for peace and progress which ought to be welcomed by all who aim at those objects.

Preservation of Plants in Alcohol. Many plants assume a brown colour when placed in alcohol for preservation, and to prevent this change Professor de Vries, of Amsterdam, proposes (*Nature*) to add 2 parts of ordinary hydrochloric acid to every 100 parts of alcohol. Parts of plants brought into this liquid while yet living become absolutely colourless, or nearly so, after the alcohol has been sufficiently often renewed. Such parts as are already brown usually retain their colour. By this method colourless specimens may be made of such plants as *Orobanche* and *Monotropa*, which, when treated in the ordinary manner, always become of a dark-brown tint. There are only some species with coriaceous leaves that cannot be treated with success with the acid alcohol; colourless specimens of these must be made by plunging them into boiling alcohol. Professor de Vries has found the proportion of acid above stated to be best suited for the purpose, and specimens may remain for months, perhaps for ever, in the acid alcohol without injury. The alcohol, after having been used, may be decolorised by distillation after neutralisation with ammonia or carbonate of soda.

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Pimento. In an interesting communication to *Nature* on "The Dispersion of Plants by Birds," Mr. D. Morris, of Kew, gives the following particulars regarding the propagation of *Pimenta vulgaris* in Jamaica. The pimento industry, he states, depends entirely for its existence on the offices of frugivorous birds. The pimento of commerce is the dried fruit of the pimento allspice, or Jamaica pepper-tree (*Pimenta vulgaris*). No other country supplies this article (although the tree itself is widely distributed both in the West Indies and on the mainland), and the value of the exports of pimento from Jamaica have reached (in 1880) a total of 100,000. This is probably the largest spice industry in the world, and it is wholly dependent

upon the action of frugivorous birds. In Lunan's "Hortus Jamaicensis," vol. ii. p. 67, published about the end of last century, it is stated that "the usual method in forming a new pimento plantation, or 'pimento walk,' is nothing more than to appropriate a piece of woodland in the neighbourhood of a plantation already existing; or, in a country where the scattered trees are found in a native state, the woods of which being fallen, the trees are suffered to remain on the ground till they become rotten and perish. In the course of twelve months after the first seasons (rains), abundance of young pimento plants will be found growing vigorously in all parts of the land, being without doubt produced from ripe berries scattered there by the birds, while the fallen trees, &c., afford them both shelter and shade." In a foot-note it is added that "birds eagerly devour the ripe seeds of the pimento, and, muting them, propagate these trees in all parts of the woods. It is thought that the seeds passing through them undergo some fermentation which fits them better for vegetation than those gathered immediately from the tree." The present plan for forming pimento plantations in Jamaica is exactly as thus described. In fact, the planters firmly believe that no other plan is likely to produce good pimento walks, although it has been shown by experiments in the Botanical Gardens that by careful treatment plants of pimento can be raised in nurseries in large numbers, exactly as any other economic plants. It remains, however, that all the present pimento plantations in Jamaica have been formed by the action of frugivorous birds, and to this agency alone we are indebted for the commercial supply of a most valuable and wholesome spice.

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Trade with Mr. Thompson, of the firm of S. Maw, Son & Thompson, has just returned from a business United tour through America, and reports very hope- States.

fully of commercial prospects in the United States. In New York, Philadelphia, Boston, St. Louis, San Francisco, and other cities, Mr. Thompson says he found business brisk, if not "booming." In Chicago and Cleveland things were dullest. Generally, however, there was a healthy demand, especially for British goods, based on an evident improvement in all branches of trade. "America has been overstocked for some years," said Mr. Thompson; "she has now fairly unloaded, and though there do not seem any signs of a near advent of free trade, I do not find any diminution in the favour with which British manufactures are regarded. French goods are less sought after than they were. These have not stood the test of use so well as those of this country. French ingenuity in imitating other brands, stamping their articles 'London made,' and so on, has tended to promote suspicion of their reliability. I believe England will do a largely increased trade with the United States next year. I never did better;" and Mr. Thompson has been notoriously successful in some of his previous trips on behalf of his firm.

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Pepperette. The adulteration of pepper is carried on in quite a scientific manner just now. There are enterprising foreign dealers in this market who generously offer to supply an excellent imitation of pepper, calculated to deceive the eye both of the merchant and of his customer. This material, which is known as "pepperette," or sometimes as "poivrette," can be had at the cheap rate of $\frac{3}{4}d.$ per lb., whereas the genuine article is now selling in the wholesale market at over $13d.$ per lb. The trade in "pepperette" is believed to be considerable. The price of genuine pepper has risen largely of late, and hence the appearance on the scene of the wholesale adulterator. A few years ago, when the value of the spice was about one-third what it is at present, the genuine article, as a rule, reached the consumer. But with a spring in prices of from $3\frac{1}{2}d.$ to over $8d.$ per lb. in the case of black pepper, and of from $5\frac{1}{2}d.$ to over $13d.$ in the case of white pepper, it pays well to put a sham article in the market, and to resort to scientific methods of adulteration. At the Liverpool Police Court last week a grocer was charged with selling black pepper adulterated with this pepperette and other ingredients. Dr. Campbell Brown had analysed the sample, and stated that it contained 65 per cent. of rice and about 4 per cent. of a hard ligneous substance which he believed to be pepperette. In his report he stated that he found the ligneous substance to consist of a whitish powder,

which, when examined by the simple lens, is seen to contain small, irregular-shaped particles similar to those which occur in pepper. When mixed with ground pepper-husks and with genuine pepper it was a clever imitation of pepper. A microscope of high power, however, shows that it is composed of pale cellular ligneous tissue resembling that in the shells of nuts or stones of fruits. Guided by a knowledge of the country from which this substance is imported, he had examined amongst other things ground nut-shells and ground olive stones. Amongst nuts, almond shells come nearest to it in microscopic appearance, but the chemical analysis, combined with the microscopic inspection, satisfied him that olive stones are the most probable source of this powder. The following analytical results bear out this supposition:—

—	Ash	Matters soluble by boiling in dilute acid	Albuminons and other matters soluble in alkali	Wood fibre
White pepperette ..	1.33	38.32	14.08	48.48
Black pepperette ..	2.47	34.55	17.66	47.69
Ground almond shells ..	2.05	23.55	24.79	51.68
Ground olive stones ..	1.61	39.08	15.04	45.38

Dr. Campbell Brown further stated that in September last the substance was first brought to his knowledge by some pepper merchants in Liverpool, who came to him and informed him that they had received letters relating to poivrette or pepperette from Italy, and asked whether it would be a fair thing to put in pepper. After some difficulty he obtained a sample and analysed it, with the result as stated.

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The New Explosive. Last week we added to a sketch of M. Berthelot a quotation from an English paper alleging that the new Minister of Public Instruction was the discoverer of an explosive so terrible in its power that he dared not reveal his secret to the public or to the military authorities. Our Paris correspondent, writing in reference to this item of news, says: "Upon investigation here, no one is to be found who ever heard of the wonderful discovery attributed to the present Minister of Public Instruction. No one acquainted with the celebrated chemist believes that he would conceal a chemical discovery for any social or political reason. A stare, a smile, or a laugh greets every inquiry about that explosive substance reported so powerful that its inventor, M. Berthelot, dare not publish its formula, lest the 'masses' would be enabled to set at naught any military force which might be brought against them. On being spoken to in this regard, M. Planche, who for ten years was a brother professor of M. Berthelot at the Paris College of Pharmacy, simply laughed, and said, 'C'est de la farce!' (Ridiculous!). This sums up very fairly the general impression of intelligent people here. The story, by the way, is not a new one, as it was circulated in America ten or fifteen years since. It is apparently a Transatlantic hoax, or a French 'canard' made for exportation." During the past week, however, a paragraph has appeared in certain French and English papers stating that "under the designation of 'melenite' a new explosive compound has been invented by a French chemist, which is said to possess powers of destruction in an almost incredible excess of any other explosive agency hitherto discovered. In its touch and appearance the substance resembles yellow clay. Picrate of potassium and dynamite upon their advent seemed to have reached the limits of sudden ignigenous destruction; but neither can be compared to the effect of melenite when employed for similar purposes; while gun-cotton, nitro-glycerine, and the pan-clastite—also the invention of a French doctor—must likewise yield the palm of annihilation to the new explosive. It has been definitely approved by the French Minister of War, General Boulanger, for military usage, and especially for charging shells; and since its effects have been proclaimed some of the French journals have indulged in unbounded jubilation."

Methylated Spirit in Pharmacy. There is a somewhat general impression that methylated spirit may be used in the preparation of any compounds which are not to be used internally. That, for example, all the liniments of the Pharmacopoeia which contain alcohol may be prepared with methylated spirit. It is so used by many chemists, by veterinary surgeons, in dispensaries, and in hospitals, for the sake of cheapness. The Board of Inland Revenue has already permitted the spirit to be used in the preparation of certain compounds, afterwards named. An earlier order of the Board states that the spirit "may not be used in the preparation of any article capable of being used wholly or partially as a beverage or internally as a medicine." This order has apparently led to the supposition that the spirit may enter into medicines which are to be used externally, and as we have received numerous questions on the subject, we have laid the whole matter before the Board and have received the following reply, dated Somerset House, W.C., December 29, 1886:—"I am desired by the Commissioners of Inland Revenue to inform you that no lotion, liniment, or compound of any kind except those specified by you, viz., sulphuric ether [chloral], chloroform and soap, compound camphor, aconite, and belladonna liniments, is permitted to be prepared with methylated spirit without the Board's special sanction."

* *

Nitrous Oxide Gas. The extraordinary accident with an iron bottle of nitrous oxide gas which occurred last week in Liverpool is likely to prejudice the reputation of this most valuable anaesthetic among unthinking people. Somehow a whitesmith seems to have got hold of one of Coxeter's bottles, which he supposed to be empty, but which actually contained, as the local paper put it, "a very explosive liquid called Coxeter's Gas." He wanted to do something with it; probably the screw was broken off and he wished to remove the damaged valve. Anyhow he put it in the fire and began to blow the bellows, with the result that the bottle burst and he himself was seriously injured. This, of course, proves no more against nitrous oxide gas than do the occasional accidents caused by seeking for gas-leakages with a lighted candle prove that the ordinary hydrocarbon of our households cannot be managed with safety if ordinary intelligence is used. Nitrous oxide cannot be called an explosive gas; a naked light exposed in it will only burn with an intenser light. The makers inform us that every bottle they send out has labelled on it its full and empty weight; and they further assure us that every vessel they make is tested under their own personal supervision to the enormous dead pressure of two tons on the square inch, and that such a test allows of the vessels being plunged into boiling water. Dentists and salesmen cannot, however, be too strongly cautioned to avoid all risk by only allowing their vessels to be repaired by those who have made this business their special study; and, if this is done, there will be immunity from danger in the future, as there has been for so many years in the past, in the employment of this greatest of anaesthetics.

Gazette.

PARTNERSHIP DISSOLVED.

LOWE, LOWE, & BERNARD, Lincoln, surgeons; as far as regards E. R. Bernard.

FIRST MEETINGS AND PUBLIC EXAMINATIONS.

BLAND, HENRY, Falsgrave, Scarborough, chemist and druggist. Dec. 31, Official Receiver's office, Scarborough; Jan. 18, Court House, Scarborough.

KITCHING, CHARLES, Oakengates and Hadley, Shropshire, chemist, druggist, and aerated-water manufacturer. Jan. 12, County Court office, Madeley; Jan. 12, County Court, Madeley.

ADJUDICATION.

BLAND, HENRY, Falsgrave, Scarborough, chemist and druggist.

NOTICE OF DIVIDEND.

SALMON, THOMAS, Denbigh, chemist and druggist. Final div. of 4d., Jan. 8, Official Receiver's office, Chester.



The following applications for Patents have been registered at the Patent Office.

Alkali.—16,562.—December 17, 1886.—G. L. Wigg, M. Steele, W. J. Wigg, and W. Towns. Treatment of sulphate of soda to obtain alkali, and in apparatus therefor.—16,712.—December 20, 1886.—R. M. Service. Recovery of caustic soda from spent liquor or alkali waste from paper mills.

Aluminium—16,627.—December 18, 1886.—J. H. Noad, P. Higgs, and J. Hobart. Production of aluminium.

Baryta, &c.—16,599.—December 17, 1886.—The Tyne Alkali Company (Limited), and T. Gibb. Manufacture of hydrate of baryta and strontia and salts thereof.

Cure for Sprains.—16,646.—December 18, 1886.—J. Critchley. Cure of sprains, &c., named "Critchley's specific cure for sprains and rheumatism."

Inhaler—16,713.—December 20, 1886.—T. Greenish and F. H. Glew. Improved apparatus to be used for inhaling or injecting medicinal vapours, gases, or powders.

Iron Sulphate.—16,563.—December 17, 1886.—G. L. Wigg, M. Steele, and W. J. Wigg. Treatment of residual copper liquors for the production of sulphate of iron.

Perfumery.—16,265.—December 11, 1886.—E. G. Colton. Apparatus for supplying perfume by means of a coin or equivalent.

Phosphoric Acid.—16,499.—December 16, 1886.—W. B. Giles and A. Shearer. Manufacture of phosphoric acid.

Sulphuric Acid.—14,247.—November 5, 1886.—J. B. Hannay. Improvements in the manufacture of sulphuric acid.—14,441.—November 9, 1886.—W. Burns. Manufacture of sulphuric acid under high pressure.—16,491.—December 16, 1886.—J. M. Walton. Manufacture of sulphurous acid and other sulphur compounds, and apparatus for same.

Sulphur Recovery.—14,711.—November 13, 1886.—J. Simpson and E. W. Parnell. Apparatus for use in the treatment of sulphuretted hydrogen for the separation of sulphur or for the production of sulphurous acid.

Syphons.—14,182.—November 4, 1886.—G. Lee. Improvements in seltzogenes or syphons for aerated liquids.—14,911.—November 17, 1886.—C. Turner.

Syringes.—15,818.—December 3, 1886.—A. J. Boult. Improvements in syringes.

Tannic Acid.—15,436.—November 26, 1886.—H. Byk. An improved process for manufacturing tannic acid in bright semi-transparent or translucent crystals or grains.

Teething Pad.—16,179.—December 10, 1886.—G. W. Herbert. A toy teething pad in part applicable to other teething pads.

Trusses.—14,287.—November 5, 1886.—G. W. Bell.—14,405.—November 8, 1886.—A. L. Fry.—14,981.—November 18, 1886.—S. Carpenter.

Urinals.—14,362.—November 6, 1886.—R. J. Shepherd. A female urinal which is self-emptying, and which retains itself in position by virtue of its peculiarly shaped mouth-piece.—14,363.—November 6, 1886.—By same. A self-emptying male urinal.

Water.—16,534.—December 16, 1886.—F. R. Lipscombe. Softening and purifying water.

Specifications recently published.

1885.

14,434. J. Laycock. Feeding bottles. 6d.

15,254. A. Christie. Holders for toilet paper. 8d.

15,766. R. E. R. James. Ointment. 4d.

1886.

8. G. Quarrie. Bottles, jars, &c. 8d.
 33. F. Perner. Tube brushes. 8d.
 47. E. W. Parnell and J. Simpson. Carbonate of soda, &c. 6d.
 148. J. A. Schofield, and J. Brierley. Stoppered bottles. 8d.
 150. T. Robinson. Alum and sulphate of alumina. 6d.
 180. J. and J. Addie. Producing sulphurous acid gas. 8d.
 227. N. Mathieson and J. Hawliczek. Bicarbonate of soda and soda ash. 6d.
 326. C. D. Abel. Preparing lanolin and anhydrous lanolin from the waste liquors of wool washing establishments, &c. 6d.
 408. H. R. Chubb. Bottle washing, &c. machines. 8d.
 416. D. Rylands. Stopper for bottles, &c. 8d.
 510. A. Brunstein. Obtaining alizarin oil from oleaginous seeds. 11d.
 594. J. C. Broadbent. Respirators and inhalers. 8d.
 745. C. Wall. Tooth brushes. 6d.
 1,050. W. Bramley. Carbonates or bicarbonates of sodium or potassium. 6d.
 1,757. E. L. Sheldon. Medicinal plaster. 6d.
 12,255. T. Raynaud. Hyposulphite of soda. 6d.
 13,599. J. S. Downing. Toilet fixtures. 8d.

The following Patents have become void through non-payment of renewal fees:—

1882.

3,917. C. Lowe and another. Disinfecting compounds.
 3,977. D. Urquhart. Ammonia, &c.
 3,994. A. Hedley. Mottled soap.
 4,017. H. J. Haddan. Hydrate of glucose
 4,032. T. Pyke. Glass bottles, &c.
 4,057. E. P. Alexander. Ammonia, &c.
 4,108. C. F. Claus. Filtering acids and other liquids.
 4,144. W. L. Wise. Manufacture of caustic potash, &c.
 4,185. N. Thompson. Stoppers for bottles, &c.
 4,214. J. Forbes. Ammoniacal salts, &c.
 4,226. W. Green. Soaps, &c.

1879.

3,295. J. Y. Betts. Preparation of horse and cattle food.
 3,579. G. W. Bremner. Phosphates of alumina.

1878.

3,282. A. A. Croll. Sulphate of alumina.

Abstracts of Recent Patents.

COMPOUND FOR REMOVING AND RELIEVING RHEUMATISM. (*Sarah Austin and Sarah Sellars, trading as Austin & Co., West Street, Banbury.* No. 14,182. 1885. 4d.) A compound or mixture for internal administration, composed of—

"Gumguacum"	..	..	..	..	..	4 oz.
Purified nitre	..	..	..	..	..	2 "
Rum	..	..	..	..	..	2 pints

Is usually made palatable by administering in white wine or other liquid.

TRUSS. (*Wm. Whiting and Wm. A. Whiting, West Brighton.* No. 14,097. 1885. 6d.) The specification is accompanied by drawings, without which a clear idea of the truss cannot be given. The belt is springless, the spring being fixed upon the pad or pads, and is adjustable, so that the pad may be adapted for femoral, inguinal, or scrotal hernia. There is provision for medicating the pad if need be.

FEEDING BOTTLES. Wooden Screw Stoppers for. (*J. Laycock, Hunslet, Leeds.* No. 14,434. 1885. 6d.) A wooden

screw stopper, perforated or not, with a washer of paper, cork, or indiarubber, as shown in drawing, and about which there appears to be nothing novel.

ENEMA APPARATUS. (*Marian P. Browne, 9 Blandford Square.* No. 15,588. 1885. 6d.) This improved surgical apparatus for administering injections consists, substantially, of an indiarubber bag, similar to a hot-water bag (for which it may be used), with openings at both ends. The usual tubes for injection or douche are attached to it, and the bag, being filled, is placed in a box provided with a spring false bottom. This spring bottom, pressing upon the bag, causes outflow of its contents. Drawings accompany the specification and render it intelligible.

PRESERVATION OF FOOD. (*V. Tribouillet & E. Husson, chemists, Paris.* No. 15,599. 1885. 8d.) This is a description, with drawing, of apparatus and method for the preservation of alimentary substances whereby pickling or salting may be done away with.

FULLER'S EARTH. (*F. Condy, 6 Leigh Road, London.* No. 15,947. 1885. 6d.) For the preparation of fuller's earth for manufacturing purposes only. The earth in its natural state is first ground, then formed into blocks, in which condition it is air-dried. After this it is heated in a heated chamber, and afterwards reduced to powder. Before so doing, in some cases, the applicant may add water, but only enough to moisten it thoroughly, for none is allowed to ooze away, thereby losing alkali, which it is the object of the patentee to prevent.

IRON COMPOUNDS, as curative and sanitary agents. (*F. R. Conder, engineer, Guildford.* No. 15,864. 1885. 6d.) This specification relates chiefly to the means which the applicant has devised for keeping solution of ferrous sulphate of constant strength, that being requisite for the precipitation of organic matter from sewage or foul water. He uses in the water of solution a certain amount of organic matter, such as beef, soap, cheese, fruit, &c. The patent has no interest to pharmacists further than it claims for the process for solutions of iron salts for curative purposes.

CEREALOSE. (*L. Cuisinier, chemist, Brussels.* No. 1,820. 1886. 6d.) This is a diastatic saccharine substance, similar to maltose, but much sweeter than it. To prepare it maize is steeped in water for two or three days, whereby an active form of diastase, named "glucase," is formed in the grain and the slightly acid water. The water is drawn off and reserved. The grain is crushed and steeped in twice its weight of water at 67° C.; 2½ to 5 per cent. of green crushed malt is now added, and the steeping water added to bring the temperature down to 60 to 62° C., but not below that. Maceration at this temperature is continued for forty-eight hours, chloroform or chloride of methyl being added to prevent alteration. The latter chemical is preferred and a process for its preparation given. After maceration the solution is filtered, the grain pressed, and the juices evaporated. Analyses (chemical and polaroscopic) of "cerealose" are given, and, amongst other claims, the use of the substance for producing alcohol, sweetening wines, &c., is claimed for.

INHALER. (*J. C. Broadbent, Roehdale.* No. 594. 1886. 8d.) The ordinary vessel used for inhalers is fitted with a double-perforated cork. A tube reaching to the bottom of the vessel passes through one hole and serves to give communication to the air. The other hole is occupied with a tube like a thistle funnel, the funnel portion being within the vessel. This portion is filled with loofah as a receptacle for medicinal substances. The outer part of the tube is connected by means of an indiarubber tube to the nose-piece, which is of peculiar construction, and on that account the applicant terms the apparatus "Rational Nasal Inhaler." The same idea is applied to respirators termed the "Oranasal Respirator-inhaler" and the "Invisible Nasal Respirator-inhaler," the particulars of which cannot be intelligently given in abstract without the drawings.

TOOTHPHBRUSH. (*C. Wall, 198 Great Brunswick Street, Dublin.* No. 745. 1886. 6d.) This is an improvement on the form of the brush. The bunches of bristles are not all of the same length, the inside rows being shortest, the outer longest and inserted at an angle inwards, so that when the brush is placed upon the teeth the crowns and sides may be cleaned in one operation.

Trade Notes.

MR. JAMES M. LAURIE has bought the business so long carried on by Mr. A. Y. Macfarlane at 255 Canongate, Edinburgh. Mr. Laurie has been assistant with Mr. Macfarlane for nearly twelve years.

THE business of the late Mr. A. Hayman, chemist, Neath, has been disposed of to Mr. Griffith Isaacs, but the well-known proprietary article, "Hayman's Balsam of Horehound," will continue to be manufactured by Mr. Hayman.

STROPHANTHUS.—Messrs. Burroughs, Wellcome & Co. inform us that they have received an announcement from their African correspondent of a large shipment of strophanthus, which they expect will arrive very shortly.

BATEY & CO. (LIMITED).—Formed to purchase and carry on the business of Messrs. Batey & Co., mineral-water manufacturers, of Kingsland Road, and also the business carried on by the vendors at Canal Road, Kingsland Road, under the name of J. and R. J. Alabaster. The capital is 100,000*l.* in shares of 5*l.* each, of which 4,000 are preference and 16,000 ordinary shares.

THE PATENT BORAX COMPANY, of Birmingham, and 101 Leadenhall Street, London, have issued two pieces of music with a good half tone of advertisement in each. One is entitled "The Borax Pet," and both words and music are original. The other, called the "Death of King Dirt," is a clever parody set to the fine old air of the "Death of Nelson."

OIL OF MUSTARD-SEED.—We have received a sample of this oil as imported from East India by Messrs. J. H. and S. Johnson, of Liverpool. The oil is of a clear amber colour, and has the subdued mustard flavour which is characteristic of the genuine expressed oil. It may not generally be known that mustard oil is now a popular remedy in the North as a lubricant for local pains, and the imported oil is preferred to that expressed in England.

THE "A 1 MENTHOL" BUSINESS hitherto carried on by Mr. J. G. Shirley at 30 Paternoster Square, E.C., has been transferred to his son, Mr. Arthur W. Shirley, and will be henceforth carried on by the latter in his own name. This will in no way affect the way in which the business will be conducted, as Mr. A. W. Shirley has always had the management. A new illustrated price-list of the specialities of the firm has just been published. These comprise fumigating ribbon, gold and silver tester, and several other articles, as well as menthol.

THE YORKSHIRE GLASS TRADE DISPUTE.—On December 24 the glass-blowers employed in the Mexborough district individually received a week's notice to leave their employment. The district embraces Mexborough, Swinton, Conisborough, and Kilnhurst, and the total number of men concerned is about 600, whose wages in the aggregate will not be short of 1,000*l.* per week. The largest body of the men, so far as this neighbourhood is concerned, are at the extensive works of Messrs. Kilner Brothers, at Conisborough. The event is not altogether unexpected, as the masters some time past notified that wages in Yorkshire were higher than in Lancashire, and that large orders which had previously been fulfilled by Yorkshire houses were being executed elsewhere. One of the employers states that the men were given notice last September that at the end of the year a 3*s.* per week reduction in wages must be expected, as well as a certain reduction for overwork. Notwithstanding the importance of the notification, he says the masters were not interviewed by the men until last Monday week, and then again last Tuesday. No arrangement being come to, the notices were on Friday handed out as arranged. The employer in question says that if no satisfactory understanding can be arrived at, and the furnaces are put out, it will be a loss per furnace to the masters of quite 50*l.* But the masters, he declares, cannot possibly carry on the work on the terms which have been in operation since the commencement of the present year, and that if the men are obstinate, a general cessation of labour will be the consequence. The opinion amongst the men in the Mexborough district seems in favour of accepting a reduction under the circumstances.

MR. J. E. GRIFFITH, late with Mr. Martindale, has succeeded to the business of Mr. J. E. Whitehead, at 274 Seven Sisters Road, Finsbury Park, and has had the shop thoroughly refitted by Messrs. Bygrave, W. H. Taylor & Co., of London, transferred the business.

MR. JOHN SHIRLOCK, of Sutton, near Chester, has disposed of his business through the agency of Messrs. W. H. Taylor & Co., of Queen Street, City, to Mr. W. H. Dangerfield, of Liverpool.

TELEGRAPHIC ADDRESSES.—“Drug-sund” is the address which is used by Messrs. Bourne, Johnson & Latimer, 34-35 Furnival Street, E.C., and should be added to the list given in our DIARY, page 163.

Personalities.

ON December 21 Mr. John Munday, chemist, High Street, Cardiff, was installed Worshipful Master of the Bute Lodge of Freemasons for the ensuing twelve months.

THE *Lancet* will still continue to be edited by members of the Wakley family, Mr. Thomas Wakley, F.R.C.S., and Mr. Thomas Wakley, jun., L.R.C.D., who succeed the late Dr. James G. Wakley, whose father established this medical journal as far back as sixty-three years ago.

THE *Times* of December 28 reports a farewell banquet given by Mr. Henry S. Wellcome, at Delmonico's, New York, to Mr. Henry M. Stanley, the African explorer, on his sudden departure from the United States, at the request of the King of the Belgians, to settle the difficulties on the Congo.

MARRIAGE.

[*Notices of Marriages and Deaths are inserted free if sent with proper authentication.*]

KERR—BANKS.—On December 22, at 3 Randolph Street, Dunfermline, by the Rev. David Russell, assisted by the Rev. John Gibb, B.D., William Kerr, chemist, High Street, to Agnes Jane Gibson Banks.

DEATHS.

ATKINSON.—On Christmas Day, Mr. George Atkinson, head of the well-known firm of manufacturing chemists, died at his residence, 21 Gloucester Terrace, Hyde Park. Mr. Atkinson was born in Doughty Street, London, in 1835, and became junior partner in his father's firm upon the death of the latter, in 1859. The firm was then already one of the oldest in the trade, its origin dating from the end of the seventeenth century, although the style under which the business was originally conducted cannot now be traced. When the late Mr. Atkinson joined the house the works as well as the counting-house were at 66 Aldersgate Street, which was then also the residence of the senior partner in the firm, Mr. Douglas Biggar; Mr. Atkinson's father having resided in the adjoining house. The style of the firm at that time was Atkinson & Biggar, but in 1884 Mr. Biggar retired from the business, and the name was changed to George Atkinson & Co., Mr. Atkinson becoming the sole proprietor. The deceased gentleman was a man of active and energetic habits, and a well-known personality on 'Change, where he attended daily, and where, as he was fond of saying, he was one of the oldest frequenters living. Mr. Atkinson leaves a widow, but no children. He had adopted the five children of a near relative, and of these one is, we believe, at present engaged in the firm. The cause of Mr. Atkinson's death was an internal complaint, from which he had been suffering for some time, although he attended business regularly until the beginning of December. By a singular coincidence the firm's occupancy of the Aldersgate Street premises expired on the day of their principal's death. Immediately after Christmas they removed to Charterhouse Buildings, Goswell Road.

HANDS.—On December 25, at Cheltenham, Frederick William Hands. Aged 26.

SUTCLIFFE.—On December 27, at 21 Embden Street, Chorlton-on-Medlock, Charles B. Sutcliffe, chemist and druggist.

TARIFF AND TRADE NOTICES.

WE obtain the following information from a recent number of the Board of Trade Journal:—

Hamburg Spice Trade. New Regulations have recently been adopted in the Hamburg market for the regulation of the trade in spices and kindred commodities. The following market allowances will in future be made for tare, &c.:—

Nature of Merchandise	Tare Allowances	Extra Allowances
Cassia lignea, polished ..	Clear tare ..	½ kilo. per box
" " original wares ..	Average tare at Hamburg ..	" boxes ½ kilo.
" vera, in packages ..	Clear tare ..	Half " ½ "
" "	Average tare fixed at Hamburg ..	3 per cent.
Cinnamon ..	2 kilos. tare per " Fardehl" ..	½ kilo. per " Fardehl"
(The real tare must not exceed 2 kilos., otherwise the vendor will have to make good the difference.)		
Cardamom ..	Clear tare ..	½ kilo. per box
Ginger, Bengal, in sacks up to 65 kilos. gross ..	1 kilo. tare ..	3 per cent.
(In case the tare really exceeds 1½ kilos., the vendor must make good the difference.)		
Ginger, Bengal, in sacks, over 65 kilos.	Clear tare ..	"
Ginger, Cochin, in boxes and sacks ..	"	"
Mace and nutmegs, in boxes and sacks ..	"	"
Cloves and clove-stalks ..	"	"
Pepper, black, sacks up to 65 kilos. gross ..	1 kilo. tare ..	"
Pepper, black, sacks over 65 kilos. gross ..	1½ "	"
(Sacks containing more than 75 kilos. gross are not customary.)		
Pepper, white, sacks up to 80 kilos. gross ..	1 "	"
Pepper, white, sacks over 80 kilos. gross ..	1½ "	"
(Sacks weighing more than 100 kilos. gross are not customary.)		
Pimento, Jamaica, sacks up to 65 kilos. gross ..	1 "	"
Pimento, Jamaica, sacks over 65 kilos. gross ..	1½ "	"
(Sacks weighing more than 80 kilos. gross are not customary.)		
Licorice	Invoice or clear tare according to agreement. 2 per cent. extra tare for leaves ..	"
Laurel leaves:—		
In hales of about 150 kilos	3 kilos. tare ..	"
" 75 to 100 "	2 "	"
" 50 "	1½ "	"

Indian Exports. Statistics of the foreign trade of British India show that during the five months, from April 1st to August 31st, 1886, that country imported from abroad—

	In 1886 Rs.	In 1885 Rs.
Chemicals, drugs, medicines, narcotics, and dyeing and tanning materials ..	30,71,381	33,20,386
Oils	47,24,855	53,31,266

The exports during the same period are given as follows:—

	In 1886 Rs.	In 1885 Rs.
Chemicals, drugs, medicines, narcotics, and dyeing and tanning materials ..	5,20,26,578	5,23,34,751
Oils	17,35,572	17,17,559

The Spanish Trade. The total value of British exports to Spain during the month of September, 1886, shows a considerable increase over the corresponding month of last year, the figures being 277,517l. and 360,807l. respectively. There is no doubt that this in-

crease has been mainly brought about by the new commercial treaty, for it is almost confined to those articles on which the duty has been lowered, notably haberdashery, arms, clay manufactures, cottons, linens, woollens, and machinery. Articles connected with the chemical and drug trades, which have not so materially benefited by the new treaty, show but little improvement, while the export to Spain of many products used in manufactures is receding, a proof that the Catalonian industry must feel the effect of the treaty. The following figures refer to some of the principal articles of export:—

		Quantity		Value	
		Sept. 1885	Sept. 1886	Sept. 1885	Sept. 1886
Al'kali	cwt.	12,390	23,650	£ 4,749	£ 8,677
Chemical products and preparations (including dye stuff) ..	cwt.	—	—	4,356	3,874
Dye stuffs, indigo	cwt.	93	117	1,942	2,691
Nitre, cubic	"	817	463		
Oil, cocoanut	"	506	722	656	
" palmi	"	4"	23	55	29
" seed	"	galls.	13,600	1,288	658
" other sorts	"	value	—	467	1,313
Soap	cwt.	570	653	522	500
Spices, cinnamon	"	32,419	37,400	1,580	2,019
" pepper	"	62,300	75,100	1,915	2,512
" unenumerated	"	54,263	41,400	1,156	1,334

The following decisions affecting the classification of articles in the Spanish Customs Tariff have recently been given by the Spanish Government:—Corrosive sublimate will be included under category 92, and pay a duty of 10 cs. (1d.) per kilo. Salicylate of soda, used only in medicine—category 91, duty, 90 cs. (9d.) per kilo. Seidlitz powders—category 90, duty, 1 peseta 85 cs. (8½d.) per kilo. Sub-nitrate of bismuth—category 92, duty, 10 cs. (1d.) per kilo. With reference to Cuba, the principal articles of interest to the drug trade on which the duty has been reduced by the new treaty are:—

	In Spanish Dollars (= 4s. 2d.), per kilo. of 2,204 lbs.	
	Old Duty	Present Duty
Aniseed, cumin, red pepper, dried peppers, &c.	100 kilos. 6 250	100 kilos. 4 700
Cinnamon (Ceylon) and nutmegs	1 kilo. 0 805	1 kilo. 0 631
" (other)	" 0 252	" 0 322
Cloves and white pepper	" 0 137	" 0 107
Perfumery:		
Oils, pomades, cosmetics, inclusive of the inside packages	" 0 232	" 0 182
Toilet waters or extracts	" 0 148	" 0 116
Soap, when packed separately	" 0 537	" 0 421
Soap, without wrappers, or three pieces at least together, or common, wrapped separately, but without mark or seal to increase its value	" 0 167	" 0 131
Powders or paste for the teeth or skin	" 0 814	" 0 638
Rice powder, egg and shell cascarillas, and other powders for the complexion, packing inclusive	" 0 167	" 0 131

Drugs and chemicals are subject to an average reduction of 25 per cent. under the new rates, although upon some the reduction is greater than this.

ELECTRO-PLATING WITH PLATINUM.—It is rumoured that an important chemical discovery is about to be announced, and in due time will come before the public in the usual form of a company prospectus. It is for electro-plating with platinum—a metal equal to gold in the brightness of surface, but much superior to it in hardness and durability. The new plated material will stand the nitric acid test, having, in fact, been boiled in nitric acid for hours without the slightest effect. Platinum, although scarcer than gold, has always been much less valuable, owing to the difficulty of working it.

Practical Notes and Formulæ.

TO MAKE CHICORY NIBS.

CUT up the roots in half inches, dividing the larger disc into half moons. Dry in the sun till they will keep. A small experimental lot could be put into the oven after the bread has been out a little while. Though if the chicory is to be immediately roasted, getting the cut roots bone dry is not of much consequence. Drying is to prevent mildew, &c. Roast the dried bits of chicory roots just like coffee, and if the experiment has been properly managed the roasted chicory will be about the size of coffee beans—chicory nibs.

The advantage of this method is that there is no mill required to prepare the chicory for sale, but the consumer can mix off any quantity of chicory nibs he may choose, and grind them with the coffee in his coffee-mill.

OINTMENT SLABS.

WHERE glass shelving is used, accidents occasionally happen and a shelf gets broken in two. If a glazier can be induced to cut up the fragments into pieces about 6 inches square, useful ointment slabs will be obtained—the very best obtainable for small ointments such as are used for the eyes.

LITHOGRAPHIC INK.

MELT 10 oz. of wax, 8 oz. of shellac, 5 oz. of mastic, 4 oz. each of pure tallow and hard tallow soap, $\frac{1}{2}$ oz. Venetian turpentine. Add $2\frac{1}{2}$ oz. of lampblack gradually, and stir constantly to make a uniform mass, a portion of which is to be emulsified with water when required.

TO COAT IRON WITH COPPER.

CLEAN the article first by rubbing with emery paper, then by treatment in a bath of muriatic acid, 1 part; water, 4 parts. Wash in hot water, and place in sawdust wet with a solution of sulphate of copper, 1 oz.; and sulphuric acid, 1 oz.; in 2 pints of water.

HEARTBURN TABLET.

THE formula for bismuth lozenges, as it appeared in the British Pharmacopœia of 1864, bears internal evidence that it was intended to represent a preparation that was popular then, and is so still to some extent, under the name of "Heartburn Tablet." The ingredients down to the oil of cinnamon are exactly what were used to make this preparation, and the dry ingredients were to be boiled with the water until a proper consistence was attained—which is the way to make tablet, not lozenges. The editors of the 1867 edition changed all this. Perhaps they were ignorant of the original intention, or did not approve of it. The cinnamon, which was a distinguishing character in the tablet, was omitted and rose water substituted, and the mass was to be made just like other lozenges; and the change is confirmed in the 1885 edition. It may, therefore, be interesting and useful to know how to prepare the old preparation, which is still in occasional demand. The bismuth, chalk, magnesia, and sugar may be taken as they stand in the present Pharmacopœia, the gum acacia being omitted—how it was inserted in 1864 is a puzzle—and $\frac{1}{2}$ drachm oil of cinnamon substituted for the rose water. The sugar is to be boiled with water to form a strong syrup, and the chalk and magnesia sprinkled in, continuing the boiling all the while. The bismuth should not be added until nearly the end, as continued boiling after its addition will blacken the product. When the tablet is ready to be poured, and off the fire, the oil of cinnamon, mixed by shaking with an equal quantity of water, should be added and quickly and diligently stirred in, and the contents of the pan then poured on a heated and well-greased slab. When cold the sheet of tablet should be scored with a knife and divided, as the 1864 B.P. directs, into "square" lozenges. The details of the operation belong rather to the art of the confectioner than the chemist, but success can easily be attained by a little practice.

It may interest some to learn that "Heartburn Tablet" was originally introduced by Dr. Burt, an eminent Edinburgh medical practitioner of some three generations ago. He

used to prepare it himself in his kitchen, with the aid of his apprentices—all doctors, even Edinburgh ones, kept apprentices in those days—and it acquired a considerable reputation, chiefly as a remedy for the distressing heartburn of pregnancy, and that notwithstanding, shall we say by reason of, the high price he charged for it—one guinea per lb. On his death the formula passed into the hands of one of the leading pharmaceutical firms in Edinburgh, and they still possess it. This preparation contains no bismuth, and appears to owe its antacid properties entirely to chalk. It is flavoured with cinnamon and coloured with bole. Demerara unrefined sugar or sugar-candy is used in its preparation.

UNGENTUM HYDRARGYRI (LANOLIN).

MERCURIAL OINTMENT can be very quickly made with lanolin. Rub together 100 parts of mercury, 25 of lanolin, and 5 of old mercurial ointment, until metallic globules are no longer visible. Then add a mixture of 50 parts of mutton suet and 75 of lanolin, previously melted together. The product is an extremely smooth ointment without disagreeable odour, and therapeutically is much more efficacious than ordinary mercurial ointment, as it is more quickly absorbed. German physicians in prescribing it term the ointment *Lanolimentum Mercuriale*.

CRYSTAL POMADE.

A VERY good pomade is, according to the *Deut. Amerie. Apoth. Zeit.*, made from the following formula :—

Ol. ricini	500
Ol. olivæ	380
Spermaceti	120
Ol. jasmini..	20
Ol. roseæ	0·5
Ol. bergamot.	0·5
Ol. neroli	gtt. 5
Ol. gerani gal.	" 2
Ol. irisid.	" 1
Cumarini..	0·02
Heliotropiui	0·1

Melt the first three ingredients over a water-bath, add the perfumes, then pour into bottles which are standing in hot water, and allow to cool slowly.

BURETTE CLAMP.

A CORRESPONDENT of the *Science News* makes the following suggestion for a home-made clamp :—Take two American clothes-pins, and fasten them together, with their jaws in opposite directions. One pair of jaws secures the clamp to the stem of a retort stand, the other pair holds the burette or other articles.

The jaws can be enlarged for the heavier burettes without enlarging the combination. It is also a convenient contrivance to hold a pipette which is repeatedly in use. The device also serves to hold a small funnel in filtering.

BLOOD-PURIFYING BITTERS.

	oz.
Burdock root, cut	4
Blue flag root, cut	1
Dandelion root, cut..	3
Sassafras bark, cut	1
Sarsaparilla root, cut	4
Wild cherry bark, cut	2
Yellow dock root, cut	1

Mix thoroughly, and put up in packages holding about 2 oz.

Directions for preparing.—Steep the contents of the package in a quart of water, with gentle heat, for two hours; strain off $1\frac{1}{2}$ pint into a quart bottle, and add $\frac{1}{2}$ pint of gin and 4 oz. of sugar. Adult dose, a wineglassful four times a day before meals and at bedtime. Dose for children in proportion.

The Formulary.

OPACITY IN VARNISH made with shellac is due to the presence of fatty matter in the shellac, and is got rid of by shaking with lime or kaolin. A colourless and transparent varnish may be made, according to *Pharmac. Central.* by dissolving shellac in alcohol, then add benzine and shake well. After twenty-four hours the mixture separates into two distinct layers, the upper colourless, the lower dark-red, and containing all the impurities.

AN IMPROVED FORMULA FOR TINCTURA COLCHICI SEMINUM.

No doubt many pharmacists must have noted how difficult colchicum seeds are to bruise; how the little masses of "horny albumen" jump and splutter all over, necessitating the covering of the mortar with an old duster and powdering under its protection. Some, to save themselves any trouble in the matter, probably buy the powder from a wholesale house—not a very commendable procedure, at the best.

In view of these difficulties I would suggest the following formula:—

Colchicum seeds	..	..	..	..	2½ oz.
Rectified spirit	..	..	..	..	10 "
Proof spirit	..	..	..	..	4 "
Water	..	..	..	..	q.s.

Place the seeds with 6 oz. of water in a clean iron pan with a cover, heat to near boiling-point, and maintain at that for fifteen minutes, or till the seeds are very slightly soft; strain through muslin, wash out the pan with sufficient water to make up what may have been lost by evaporation, pour it over the seeds in the muslin strainer, and drain; transfer the seeds to an iron mortar and powder well, which will be accomplished much easier and the tendency to splutter will be reduced to a minimum. Then mix the spirit and the liquor from the seeds, add the bruised seeds, and macerate forty-eight hours with occasional agitation, then transfer to a percolator, and when the fluid ceases to pass continue the percolation with the 4 oz. of proof spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make 1 pint. The resulting tincture is certainly much better in colour, owing, no doubt, to the better withdrawal of the extractive matter during the heating process and the more perfect comminution of the seeds afterwards, and, consequently, in all probability, much more effectual therapeutically.—JOHN T. COATS (LEITH).

TO PREVENT THE DETERIORATION OF RUBBER APPARATUS.

AN inquiry has been carried out under the direction of the French Minister of War with the object of ascertaining the cause and the remedy for the peculiar changes which articles made of indiarubber undergo when kept in stock, the annual loss to the Government from the deterioration of this class of goods being very considerable. Experience shows that indiarubber, after a time, loses the very qualities which make it useful, for it becomes dry and brittle. Articles kept in boxes, such as Higginson's syringes, Esmarch's bandages and drainage tubes, are particularly liable to deteriorate. Unfortunately, the commissioners, after a long and patient investigation, are not able to suggest much more than could have been recommended before. They advise, for instance, that Esmarch's bandages should be taken out of the boxes at least once a month, unrolled, and manipulated. Drainage tubes should be hung up in a cool place, or soaked in a non-putrescible fluid. Finally, all objects made of rubber should be kept in a cool damp place, at a constant temperature, and sheltered from light, heat, and frost. Seeing that, in many cases, these conditions cannot be complied with, it is recommended that the bandages should be made of pure leaf rubber, in lieu of the elastic tissue usually employed. The purer the rubber the less readily does it undergo these structural alterations, and the lighter it weighs; its weight is, therefore, a sure guide to its quality. In consequence of these inquiries, the Minister has ordered that in future all rubber articles are to be made with pure rubber of the best quality, preferably with the leaf rubber. The quality of the articles will be gauged by their specific gravity in order to insure the purity of the material employed.—*Brit. Med. Journ.*

PURPLE INK.

BOIL 55 parts logwood with 450 parts water until a dark-brown fluid is obtained. Filter this, and mix with 6 parts crystallised verdigris, 72 parts alum, and 40 parts gum arabic.

Boil to effect a thorough solution, let stand for a few days, and decant.—*National Druggist.*

CONDENSED MILK IN COD-LIVER OIL EMULSIONS.

MILK being a natural emulsion is an excellent vehicle for the administration of cod-liver oil, which it emulsifies easily if gradually added in a sufficient quantity. This emulsion is extremely durable, it does not alter its appearance or separate, and effectively covers the taste and flavour of the oil. The addition of pancreatin to the milk is recommended. By this addition the milk is partly peptonised and the emulsion becomes still more satisfactory.—*Zeitschr. O. A. Vereins.*

A TEN-MINUTE PROCESS FOR MERCURIAL OINTMENT.

MR. C. S. HALLBERG recommends wool fat as a "killing" agent for this ointment. He states (*Western Druggist*) that he triturated 5 grams of mercury briskly in a mortar for ten minutes with 1·5 of purified wool fat, and it was completely extinguished; 3·5 of petrolatum was then incorporated, the resulting product being an ointment containing 50 per cent. of mercury, in which the globules were not visible with a magnifying power considerably greater than that required by the U.S. Pharmacopoeia. In comparing the ointment thus made with a specimen purchased from a dealer a great difference was observed. While the first mentioned, when exhibited to the light in a thin layer and examined by a lens, was found to be perfectly opaque, the commercial specimen under the same conditions appeared translucent, with here and there a black speck suggesting a mixture of petrolatum and blacklead.

LIQUOR FERRI IODIDI.

THE U. S. *National Formulary* gives a recipe for a 1 in 5 liquor, in which each 8 oz. contains 3 fluid drachms of hypophosphorous acid (50 per cent.).

CERATUM CAMPHORE COMPOSITUM. CAMPHOR ICE.

	Parts
Camphor	.. .. .. .. .. 3
Benzoinated lard	.. .. .. .. .. 15
White wax	.. .. .. .. .. 10
Spermactei	.. .. .. .. .. 4
Alcohol, a sufficient quantity	

Triturate the camphor with a sufficient quantity of alcohol to dissolve it. Then, having melted the white wax and spermactei on a water-bath, gradually add the solution of camphor, and continue stirring until the alcohol has evaporated. Then withdraw the heat, and having stirred the mixture occasionally until it has somewhat cooled, mix it, while still liquid, intimately with the benzoinated lard (which should have been prepared from purified and washed lard), and pour it into suitable moulds.

U. S. *National Formulary*.

BELGIAN PUTZ-POWDER,

for cleaning gold, silver, and other metals, is prepared from:—

	Parts
Chalk	.. .. .. .. .. 250
White bale	.. .. .. .. .. 100
Carbonate of lead	.. .. .. .. .. 125
Magnesia	.. .. .. .. .. 20
Oxide of iron	.. .. .. .. .. 20

The mixture must be absolutely free from gritty particles.—*American Druggist.*

MUCILAGE OF ACACIA.

MR. H. NOFTKE states (*Pharm. Zeit.*) that mucilage is best made with hot water. The water should first be boiled, then allowed to cool to about 80° C. This is then poured upon the gum arabic, previously washed with cold distilled water, and the whole is well covered, set aside in a cool place, and frequently stirred. Make up to the required volume, and strain through a woollen strainer previously washed with distilled water. The strained mucilage should be filled into small bottles previously dried in a drying oven, and still hot when filled. Mucilage thus prepared is said to be clear and bright, and, if put up as directed, keeps well, though it generally becomes faintly opalescent after a few days. If heated in a steam-bath, immediately after it has been strained, it will keep still better, but this second heating renders it opaque.

Trade Report.

MINCING LANE, December 30.

VERY little business has been transacted during the present week, and the head-quarters of the drug and chemical trades will not again resume their normal appearance for some days to come. The rise in *opium* has continued, and one firm is now quoting *morphia* at 5s. 6d. per oz., although most makers still maintain their price at 5s. *Borax* is extremely firm at the last quotations. It is said that there are several parcels of foreign refined offering, although others maintain that the German houses hold at prices far above those quoted in our market. We understand that one of the principal firms of refiners have issued a circular stating that a change is about to occur in the article. *Boracic acid* is dearer, at 26s. per cwt.

Iodine remains unchanged at 5½d., but *Iodide of Potassium* is very firm, makers still being full of orders. It is also thought that *bromides* may take a turn for the better. *Quinine Sulphate* remains neglected, although prices are as yet unchanged. *Phosphorus* firm at 2s. for wedges, 2s. 1d. for sticks, and 3s. 1d. for amorphous. *Quicksilver* is held at 7l. 5s. by the principal importer, but at 7l. 2s. in second-hand. *Copper Sulphate* very firm and expected to advance; London make held at 14l., other brand at 14l. 15s. to 15l. *Cocaine* steady with a tendency towards a rise; English makers quote at 1s. 1d. to 1s. 2d. per gramme, according to packing, while German cocaine in bulk is stated to have been sold at 1s. per gramme. *Arsenic* advancing.

American oil of *peppermint* of the H.G.H. brand is quoted at 15s. 9d. to 16s. per lb., and we hear that Japanese oil has been offered this week as low as 5s. per lb., though the brand is not named. There are buyers of *citric acid* at 1s. 10½d. per lb., and there is little offering, even at 1s. 11d. per lb. Our stock is very light. Crude *camphor* is still quoted at 65s. to 66s. for Japanese, and a fraction less for Chinese, but there is some talk of a possible advance, as the stock is gradually being absorbed by a single holder. Our available supply is small, and has been steadily decreasing for several years. Refined camphor is worth, say, 11½d. to 1s. 2½d. per lb.

The next drug sales will be held on January 13, and some caddies of fine *Tonquin musk* will, we understand, be offered on that occasion. Unless supplies should unexpectedly become visible, the article is almost certain to rise in value. No further arrivals have taken place this week. About 120 bales *Tinnevelly senna* have arrived recently, and at Cairo a parcel of 100 bales so-called *Alexandrian leaves* are expected from the Sennar province. This lot will, it is thought, bring very high prices, communication with the interior of Africa being still very difficult, and the Cairo market bare of stock.

Rhubarb is changing hands privately at previous rates, but there is no root of really fine quality on the market. *Essence of lemon* has made no further advance, but orders are coming in, it is said, from the country. Essential oil of *Star Anise* still quoted at 6s. 6d. per lb. *Cloves* are again firmer, at 1s. 0½d. per lb. for Zanzibar.

The year now closing has certainly not been a very favourable one for the wholesale drug trade. It opened with every prospect of coming improvements, but this anticipation has not been realised, and throughout the summer many important articles declined month by month. It is true that within the last two months a marked improvement has been manifest, but how far this will be maintained the future alone can show. Now, as at the close of 1885, it is from the United States that improvement is reported, and according to all accounts trade in that country is in a flourishing condition, and still better things are anticipated towards the spring. Among chemicals, citric and tartaric acid, ammonia and soda salts are lower now than at the commencement of the year. The fall in quinine and iodine, has been very remarkable, and large sums of money must have been lost by holders of these articles. On the other hand, glycerine, mercury, and morphia are much dearer, but it may at least

be questioned whether the pronounced advance in the former article is warranted, while the price of mercury is practically controlled by a single house, and does not afford an indication of the actual condition of the market. In drugs we have to note an improvement in copaiba balsam, musk, oil of cloves, otto of roses, and fine acacia gum; but Peruvian balsam, cinchona bark, camphor, cardamoms, castor oil, honey, gum ammoniacum, gum asa-fetida, and saffron are lower. Olive and palm oils, petroleum, shellac, turmeric, cassia lignea, cochineal, beeswax, and Japan wax are all worth less now than when the year commenced, but notable improvements have taken place in cloves and pepper.

THE AMERICAN MARKETS.

NEW YORK, December 17.

THE end of the year is naturally a slack time in wholesale business, and as the drug trade is no exception to the rule, there has been little doing since I last wrote. The outlook, however, is excellent, and a brisk and active market is expected during the early spring months.

The prices sterling (in parentheses) are what the different articles would cost delivered in London, all market allowances, discounts, &c., being taken into account. Importers can therefore see at a glance the course of this market compared with their own.

LIME (ACETATE).—The market for *brown* is still 2c. (11l. c.i.f.), but, as no contracts have as yet been made for 1887, makers are now willing to meet buyers at 10l. c.i.f. terms, a price refused a month ago. If users wait, or pursue a hand-to-mouth policy, much lower prices will be seen next summer.

SARSAPARILLA (MEXICAN).—The bulk of the stock here is held by the importer who three months ago tried to corner our market and bought over 500 bales in Hamburg. Lately he received by sailer from Tampico 200 bales, so that now he holds about 500 bales here also. With the exception of a small parcel offering from Havre, these thousand bales comprise all the root in sight, and, as outside lots are gradually getting absorbed, when the demand for the spring trade sets in it will be found that the stock, being practically in one hand, high prices will have to be paid. Buyers, therefore, should not delay in picking up any cheap lots offering. In 1885, 2,672 bales arrived in New York. This year 3,272 came to hand, 2,000 of which arrived before June.

COCA LEAVES.—The stock in first hands consists of about 30,000 lbs., mostly *Truxillo* and inferior *Huanuco*.

OIL OF PEPPERMINT.—The market for H. G. Hotchkiss remains nominally \$3.60 (16s. 6d.), but sales have been made below this for quantity, say \$3.50 (16s.). It is doubtful, however, if any more can be procured at that price. Mr. Hotchkiss will not sell so low. As to bulk oil the trade is dull, but, stock being small and the farmers holding firmly for \$3.00 (13s.), higher rates are expected in many quarters.

QUININE.—Beyond a very firm feeling in the market there is no change to report.

SERPENTARIA ROOT.—The holder of the great bulk of this root in Texas appears to want to sell badly. He has 20,000 lbs. to dispose of before February, and lower prices will prevail. It is thought buyers will do wisely to buy only small quantities for the present.

A direct arrival from Zanzibar has taken place of 620 bales chillies, 32 cases gum myrrh, and 658 bales clove stems.

CONVENTION FOR THE POTASH TRADE.—The potash producers in Germany have concluded a convention embracing all German firms, with the exception of that of Carl Heintz, of Stettin. The object of the convention is not to increase potash prices excessively to the detriment of the public, but so that adequate profits may be again realised. For the purpose of meeting the peculiar circumstances of all districts—as dependent on geographical position, &c.—the association has been divided into two groups, an eastern and a western group, the former of which has chosen Berlin as the seat of its sale syndicate.—(*Kuhlow's Trade Review*,)



Memoranda for Correspondents.

Always send your proper name and address: we do not publish them unless you wish.

Write on one side of the paper only; write early; and devote a separate sheet of paper to each query if you ask more than one, or if you are writing about other matters at the same time.

If you send us newspapers please mark what you wish us to read.

Ask us anything of pharmaceutical interest: we shall do our best to reply.

Letters, queries, &c., not noticed in this issue will, if possible, be attended to next week.

Assistants' Characters.

SIR,—I think the subject of giving assistants characters is one requiring serious attention. My experience proves that with characters of equal value I have engaged men who have served me faithfully, and others who have turned out to be the biggest scoundrels that disgrace society. The conduct of employers who give false characters is most reprehensible, although, unfortunately, it may be perfectly legal, and a master has no protection except that of exercising the utmost caution before concluding an engagement. I understand the law to be that giving a false character is not *per se* an offence. Malice must be proved by the complainant, as well as loss arising from the action. Let me give two illustrations; both men I believe to be still in the profession.

A. B., from London; two excellent references. On inquiry—unfortunately too late—the one proved to be from A. B.'s fellow-assistant, who was dismissed his situation at the same time. The other was from a man of light and leading in pharmacy, in whose service he had been six years previously, which fact was carefully concealed. A. B. proved to be drunken, dishonest, and immoral.

C. D. applied; had three excellent references, each of whom wired in the most satisfactory way. On further inquiry by letter it appeared that A. employed him in his own absence for a week; B. and C. employed him some years since, but knew nothing of his late history. C. D. on being pressed for further particulars flatly declined to give them, and, finally, I had my last letter to him returned through the dead-letter office!

I could, if space allowed, give even worse cases than the above. My advice to my brother-chemists is to take nothing for granted, but to insist on the fullest particulars. An honest man will only too gladly supply them; a dishonest man is the only person likely to be backward.

I am, sir, yours faithfully,
ALPHA. (16/42.)

The Sheffield Prosecution.

SIR,—As you gave a full report of the trials at Sheffield under the Food and Drugs Act, I, as one of the interested parties, should like to say a word or two on the subject. I should not have troubled you, only for the analyst's report, at which I admit I was amazed. Well, sir, I think it would be very unlikely that I or any other chemist could sell for a fortnight an article (such as was reported by the analyst) to old laudanum drinkers without having some complaints; but I had not a single complaint from anyone as to quality. I had every confidence in the tincture I sold the inspector. I was very much surprised to be served with a summons, and I at once forwarded it to the house that supplied me for an explanation. The answer was that, "after making inquiries, it was found that, instead of sending the B.P. as ordered, they sent a preparation of their own that they have made for years

for a special purpose." That reply decided my course of action. I felt there was no defence to the case, but simply to state that I bought it for B.P. and sold it for the same. But as to admitting the facts, I did nothing of the kind. I admitted having sold the tincture to the inspector, but I did not believe the report could be correct. I again communicated with the makers, and they declare the following form to be the one from which the tincture was made:—

Gum opii elect.	..	..	..	..	10 oz.
Spt. vini rect.	64 o.p.	..	..	..	3½ pints
Aqua ad	..	..	..	..	1 gallon

so that one would look for a different result after analysis.

As to the decision of the Stipendiary, his own view of the case was logical, I think, but not a desirable one to be acted upon; for everyone must admit the necessity for uniformity in these things. But how is it to be arrived at—how are frauds to be detected? We have had some very respectable manufacturers in Sheffield connected with trade frauds; but perhaps our wholesale people are more righteous than they. Supposing, however, that a bottle of tr. opii is sent to a customer for B.P., how is he to know that it is that quality? Is he to analyse it, or send it to be done? If so, where is it to stop? Must that system apply to everything? Then, should it be found wanting, how is it to be brought home to the maker? The purchaser may know where it comes from, but is it likely that anyone knowingly sending out such an article would be afraid of denying its parentage? There may be a label on the bottle, but they cannot label the contents. It is not like buying a knife; if it is not the article asked for there is the mark upon it, and that corresponds with the invoice, and can be traced to the maker. It may be asked why, if I dispute the correctness of the report, I do not have the portion left with me tested? I answer that when I learned there might be a little deficiency, and that there was no use defending, I broke the seal and emptied the bottle.

215 Arundel Street, Sheffield.

G. BYWATER

Information Wanted.

SIR,—In last week's issue of THE CHEMIST AND DRUGGIST, under the head of "Information Wanted," you gave publicity to some person's wish to be informed of the composition of a "pick-me-up" made by a gentleman whose name and address were given by the inquirer. Now this person must know full well that were he to apply to the maker of this "pick-me-up" for the formula thereof he would be duly snubbed; and in adopting the other course he practically admits that he wishes to obtain a recipe contrary to the wishes of the proprietor. Then the impression created in the minds of your readers must be one of regret that a journal like THE CHEMIST AND DRUGGIST should open its columns to such impudent inquiries.

I am, sir, yours faithfully,
20 Royal Exchange, December 22. R. H. COOPER.

[We agree to some extent with the writer of this letter, but not entirely. It will be admitted that we have invariably discouraged any approach to piracy of other people's property, and some correspondents have accused us of favouring "proprietors" rather than "the trade." But we can see no reason why any person who wants to make a "pick-me-up" should not aim to make the best he can; nor, in pursuance of this object, why he should not ask for information about the composition of the preparation which he regards as the best. The man who does not try to learn from his competitors is not particularly wise. And in reply to Mr. Cooper's implied censure of ourselves, we submit that whenever we can give information concerning the composition of secret remedies we are ministering to a perfectly legitimate curiosity on the part of the men who sell these preparations.]

DISPENSING NOTES.

Potass. Iodid. and Spt. Ether. Nitrosi.

SIR,—With respect to the potass. iodid. and spt. aether. nit. mixture, published in your journal for December 18, page 821, I should like to know if it would not be justifiable to neutralise the spirit, and so avoid the liberation of the

iodine, as it seems to me quite evident that the writer does not mean the iodine to be liberated.

I had a similar mixture the other day, but which contained tr. card. co. in addition. I neutralised the spirit with K_2CO_3 and the result was a splendid mixture. A friend of mine dispensed the same one without neutralising, and got a dirty, muddy-looking mixture. Should like your opinion on this point.

Yours truly,

J. O. STRINGER.

[The mixture referred to contained acid tartrate of potash, so that neutralising the spirit is out of the question. Generally speaking, it is considered the proper plan to neutralise spirit of nitrous ether before adding it to an aqueous solution of an iodide.]

Quiniae Sulphas in Pills.

SIR,—In reply to Mr. Tabor, I beg to say that acid. sulphuric. pur. is most certainly intended, and with exceedingly rapid manipulation will make absolutely perfect pills. Use a faultlessly clean mortar and pill-machine, cleaning your finger-tips first with acid. sulph. dil., and use about two-thirds of the acid ordered in the prescription. After massing with lightning rapidity, roll out and round with the fingers, using creta gall. Make only fifteen at a time. I have some varnished 2-gr. pills made as above over four years ago, small, bright, and almost pure white.

Yours faithfully,

WALTER S. CORDER.

Examination Prescriptions.

The following were dispensed by three candidates, who were examined twice in Edinburgh, the second time successfully:

Tr. ferri perchlorid.	... 3ij.	Ferri sulph.	... gr. iss.
Potass. tart.	... 3j.	Pil. aloes c. myrrh.	... gr. iv.
Aqua ad	... ... 3vj.	M. Ft. pil. Mitte xij. Una t. d. sumend.	
M. Ft. mist. 3ss. bis die.		The pil. aloes c. myrrh was in powder, and $\frac{3}{4}$ grs. of it to $2\frac{1}{2}$ grs. of confect. to make 6 grs. of mass.	
Shake-the-bottle label.			
Atropia sulph.	... gr. $\frac{1}{2}$	Phosphori	... gr. $\frac{1}{2}$
Ol. theobrom.	... q.s.	Ferri redact.	... gr. iij.
Ft. suppos. Mitte vj.		M. Ft. pil. Mitte xxiv.	
Ext. belladon.	... gr. iiij.	Phosphorus mass = 1 gr. in 32 grs.	
Ol. theobrom.	... q.s.	Emp. canthar. pone sinistram auren ponendam.	
Ft. suppos. Mitte vj.		Mag. sulph.	... 3j.
*Hyd. perchlor.	... gr. ij.	Mag. carb.	... 3ss.
Ext. coloc. co.	... gr. iiij.	Tr. lavand. co.	... 3ij.
Ft. pil. Mitte xij. Quarum cap. om. noct. si opus sit.		Pot. iodid.	... 3ss.
Bals. copaibae	... 3ss.	Tr. aurantii	... 3ss.
Pul. gum acac.	... 3ij.	Aq. meth. ad	... 3vij.
Liq. potassæ	... 3j.	M. Ft. mist. Cujus æger cap. coch. unum ter in die in cyatho vivario aq. frig. post jentac. prand. ct coen.	
Tinct. opii	... 3ij.	Ol. ricini	... 3ij.
Sp. æther. nit.	... 3ij.	Ol. terebinth.	... 3ij.
Aq. ad	... 3iv.	Gum acacie	... 3ij.
Capt. 3ss. q.q. quart. horâ.		Aq. ad.	... 3iv.
Tr. cannab. ind.	... 3ij.	M. Ft. mist. Cap. 3ss. q.q. quaterve sextâ horâ sum.	
Tr. card. co.	... 3ij.	Plumbi acet.	... gr. xiv.
Aq. ad	... 3iv.	Pulv. opii	... gr. xx.
M. Ft. mist. sec. art. Coch. mag. j. t. d.s.		Adipis	... 3ss.
Pulv. opii	... gr. iiij.	Ft. ung. ut m. d. s.	
Potass. nit.	... gr. xv.	Acet. plumbi	... gr. iiij.
M. Ft. pulv. tres. j. bis die sum.		Pulv. opii	... gr. j.
Potassii iodid.	... gr. xx.	Ol. theobrom.	... q.s.
Potassii carb.	... gr. x.	Ft. suppos. Mitte vj.	
Adipis ad	... 3j.	Ferri sulph.	... gr. j.
M. Ft. ung. ut m. d. utend.		Ext. haematoxili	... gr. ij.
Ammou. carb.	... 3j.	Ext. hyoscyami	... gr. j.
Tr. tolu	... 3ij.	M. Ft. pil. Mitte xij. f. t. d.	
Tr. camph. co.	... 5ij.		
Pulv. tragac. co.	... gr. viij.		
Aqua ad	... 3iv.		
M. Ft. mist. Coch. mag. ter qua-			
terve dic sum.			

* What was done in this case?—ED.

An Iodide Mixture.

SIR,—Would you be kind enough to say through your valuable journal what should be the colour (if any) of the following prescription, presuming, of course, that it has been most carefully dispensed. I have been dispensing for nearly half a century, but never before had a similar complaint about an iron mixture such as I have had respecting the following.

Potassii iodidi..	..	..	..	gr. 120
Syr. ferri iodidi	..	..	..	3ij.
Aq. chloroformi	..	..	..	3iv.
Ft. mist. 3vij.				

I am, yours &c.

W. W. B.

[The mixture is almost water-white at first, but gradually darkens.]

Graduated Bottles.

SIR,—After a chemist has done his best in providing a carefully marked bottle, the patient will frequently mistake his dose. I find it necessary, or at least advisable, to use this label freely:—

It is necessary to observe that the marks on this bottle indicate the exact dose; they may be trusted in preference to spoons and measures.

Our local medicoes are careful writers, and they order mixtures by 3ss or $\frac{3}{4}$ doses.

HEDER.

LEGAL QUERIES.

Ecosse (17/10) writes:—Please say in your next (1) whether or not the sale of the P. Glycyrrhiz. Co. (Dr. Oxley's) which you noticed in a recent issue would render a chemist liable to a penalty under the Food and Drugs Adulteration Act. (2) Pil. Coloc. Co., B.P., as now made with the resin, also causes severe griping. Loud complaints from customers in consequence. Am I justified in going back to the use of the scammon. *virgin.* and discarding the resin? Would the above Act apply here also?

[Dr. Oxley's modification of pulv. glycyrrhiz. co. should certainly not be sold as compound liquorice powder without special mention of the alteration, such as would be given in the designations "Improved Compound Liquorice Powder" and "Compound Liquorice Powder (Dr. Oxley's Formula)." The same remark applies to pil. coloc. co. made with virgin scammony, and neither of these modifications may be supplied to a medical prescription, because that would be contrary to the Medical Act. This fact would probably influence the case of the prosecution under the Sale of Food and Drugs Act, which otherwise would be a strong one, if the analytical evidence were good.]

5/265. *Town* asks would it be illegal to use methylated spirit in a parasitic hair lotion? [Methylated spirit may not be used in the preparation of this or any other compound for which the Board of Inland Revenue has not given special sanction. See note on p. 17.]

MISCELLANEOUS INQUIRIES.

THE CHEMISTS' AND DRUGGISTS' DIARY, 1887, page 244. *Junior* states that the quantities of excipients for pil. cambogiae co., coloc. co., and saponis co. have been omitted from his copy of the DIARY. This may be the case in a few copies, but not in all. The quantities are:—

Pil. cambogiae co.	...	...	Syrup 3ss.
Pil. coloc. co.	...	...	Water 3ss.
Pil. saponis co.	...	...	Glycerine 3ij.

These for the official quantities of the respective masses.

15/61. *Ugly*.—You will find very full directions for coating pills in "The Art of Pharmacy," which we have reprinted from this year's DIARY.

16/68. *C. E. L.*—A weak solution of oxalic acid removes ink marks from paper if cautiously applied.

16/53. *H. Forster*.—“How to Work with the Spectroscopic.” By J. Browning, 63 Strand, W.C., price 1s. 6d. This volume contains very concise information on the spectroscope, its accessories and uses.

17/12. *Oleum*.—The solution which you send is pyrolycous acid, commonly known as “essence of smoke.” It is used in the curing of hams.

17/46. *Inquirer* wishes a way to make Chlorodyne (Dr. Ogden's formula), so that when it is merely shaken it will mix perfectly. The original formula does not afford a satisfactory preparation, only about a sixth of the amount of treacle required being ordered. The following formula is better:—

Chloroform	4 drachms
Oil. menth. pip.	8 drops
Capsicue	½ grain
Ext. cannab. ind.	16 "
Morph. hydrochlor.	16 "
Acid hydrocyanic (Scheele)	96 drops
Ether	1½ drachms
Glycerine	2 "
Syrup	2 "
Treacle	4 "
Water	1 "
Hydrochloric acid	15 drops

Dissolve the morphia in the water and hydrochloric acid by the aid of a gentle heat; then add the solution to the glycerine, syrup, and treacle mixed together. Mix the first four ingredients, and shake until dissolved, then add the solution, in four portions, to the syrupy mixture; shake vigorously between each portion. Add the ether, then the hydrocyanic acid, and finally sufficient glycerine to make the whole measure 2 oz.

39/113. *Leonard*.—If the unfermented wine is heated strongly enough, carbonic oxide (CO) will be one of the products of combustion, and will burn with a blue flame. Some ethers, such as are used for flavouring, burn with a blue flame at a lower temperature, but glycerine would not give off inflammable vapour until all the water has been evaporated.

17/33. *Non Sapiens*.—“Frost” is made from glass. For small articles benzoic acid may be used, or, where applicable, a hot saturated solution of Epsom salts may be painted on the articles.

17/31. *J. M. P.*—Shoemakers' Ink made with logwood is apt to become glutinous, and for that reason does not penetrate. Make the ink very weak of log wood and bichromate, but with the same quantity of iron sulphate (which will form ink with the tannin in the leather). Add also 1 to 2 oz. of methylated spirit to each pint.

17/74. *A Reader* (Fife-Keith).—A formula for cod-liver oil emulsion, with tragacanth, will be found on p. 158 of the issue for July 31, 1886. We have had excellent results with this formula, but a little practice is required.

17/8. *J. Summer*.—Alterative medicinc and the application of boracic ointment is the best treatment for cow-pox or chicken-pox.

13/111. *J. H. Holmes*.—Bruised Eye.—The application of raw beef or of fresh Solomon's seal appears to give satisfactory results. A strong infusion of *Capsicum annuum* has also been recommended. See *C. & D.*, vol. xxix., page 782.

17/17. *Aerated Waters*.—D. wishes to start the manufacturing of aerated waters. He is a chemist in a provincial town

and gets his waters from a local manufacturer, and pays him 1s. per dozen, his annual account amounting to 50l. Would it pay him to make them himself, assuming that his trade would in time extend? He is also anxious to know which maker's apparatus he should use.

[On the latter point “D.” will not be wrong in applying to any of the makers who advertise in THE CHEMIST AND DRUGGIST, carefully examining their catalogues.]

Foreign and Colonial.

MR. CARLO ERBA, a large manufacturer of chemical and pharmaceutical products in Milan (Italy), has subscribed 400,000f. (16,000l.) towards the foundation of a local school for electric technology.

BENZINE EXPLOSION AT STUTTGART.—An explosion occasioning the death of two people and the severe injury of five others took place at a Stuttgart manufactory on December 7. It appears that two of the workpeople went into the cellar to fill a bottle from a flask of benzine kept there, and from which a supply was daily taken for cleaning purposes. They procured a small lamp from two apprentices who were engaged in putting away waste paper, and placed it on a petroleum barrel hard by. The benzine pouring from the flask exploded, and the thick fumes generated by it suffocated the two apprentices, while the two workpeople were just able to escape with severe injuries. Three hands engaged on the first floor of the building, upon hearing the explosion, jumped out of the window and were much bruised.

THE SPIRIT MONOPOLY IN SWITZERLAND.—The National Council, on December 10, accepted the Spirit Monopoly Bill by a practically unanimous vote, and it is thought that the law is now certain to pass through its remaining stages. The right of manufacturing and importing alcoholic liquors will, under this law, become the monopoly of the State. The latter is bound to employ alcoholic liquor containing not more than 0·3 per cent of impurities. The supply of about one-fourth of the alcohol required must be allotted by contract to producers within the Swiss Federation. The contractors are required to use by preference crude materials produced in the country. The maximum amount of absolute alcohol to be allotted to one contractor is 1,000 hectolitres (about 22,000 gallons) per annum.

PROPOSED SPIRIT MONOPOLY IN GREECE.—In addition to Germany and Switzerland, an attempt is about to be made to carry a Bill through the Greek legislature, having for its object to monopolise the spirit trade of the country. Under this Bill the Government of M. Tricoupis would hand over to a proposed private company the exclusive right to purchase crude spirit at a fixed price, and to sell the refined article, wholesale and retail, also at fixed rates. It is thought that by this plan the spirit-tax, which at present yields only about 500,000 drachma (20,000l.) per annum, could be made to return from 2 to 2½ million drachma (80,000l. to 100,000l.). At present Greece is in one of its frequent conditions of legislative deadlock. The Chamber has been dissolved, and it will depend upon the result of the impending elections whether the monopoly project can be carried out.

THE GERMAN POTASH TRADE.—The production of chloride of potash for 1886 is announced at 1,923,994 centners, to which stocks at the beginning of the year must be added, viz., 103,737 centners, in order to get at the quantity open for sale, viz., 2,027,731 centners. The sales amounted to 2,041,849 centners up to November 30 (though, of course all had not been delivered), so that the sales of 1885 will be considerably exceeded this year. The improved condition of the river Elbe has been of great service to the chloride of potash trade lately. Orders for about 300,000 centners of goods of high percentage have arrived from America this month, and a large spring demand may be counted on from that country. The industry is at present in a very gratifying position.

SWEET GIRL GRADUATES IN PRUSSIA.—The *Journal de Pharmacie d'Anvers* states that the Prussian Minister of Education has prohibited the admission of ladies to the Prussian universities, either as students or to lectures.

Chiswick Soap Co.

CHISWICK, LONDON.

SPECIALITIES.

"Imperial" Brand,

In Tins for Domestic Use,
1, 2, 3, 3½, 4, & 7 lbs. each, net.
Also Firkins and Half-Firkins.

Sanitary Soft Soap,

containing 10% Carbolic Acid,
in all size Tins and Firkins.



Manufacturers of every
description of SOFT SOAP,
for Home and Export.

"BBB" and "BB" qualities,
for ordinary Scouring Pur-
poses, making Sheep Dip, &c.
Strongly recommended as firm,
pale, transparent, genuine
Soaps.

Price Lists and Samples free by
post upon application.

Soft Soap.

SOLE IMPORTERS

OF

APOLLINARIS WATER,

FRIEDRICHSHALL WATER,

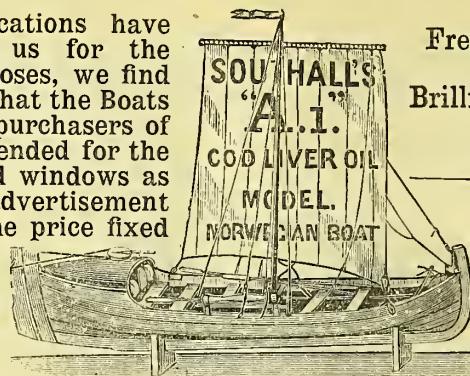
HUNYADI JANOS WATER,

THE APOLLINARIS COMPANY, LTD.,

19 REGENT STREET, LONDON, S.W.

SPECIAL PRICES ON APPLICATION.

AS frequent applications have been made to us for the Boats for other purposes, we find it necessary to state that the Boats are only supplied to purchasers of the Oil. They are intended for the interior of shops and windows as an attraction and advertisement for the "A1" Oil; the price fixed is very moderate—namely, 10/- each. £2 2s. Od. would be asked if purchased in the ordinary way.



SPECIAL CHARACTERISTICS:
Freedom from indigestible fatty acids.
Brilliant appearance in severe frosty weather.
Absolute purity.

9s. per Gallon, in Winchester Quarts,
TO A/C.

TEN BLUE TRADE MARK LABELS SUPPLIED
WITH EACH WINCHESTER QUART

The "En Norsk Fisker" Labels, in Colours,
are now sold at 2s. per 100.

SOUTHALL BROS. & BARCLAY,
BIRMINGHAM.

HIRST, BROOKE & HIRST, LEEDS,

MANUFACTURERS OF ALL KINDS OF

PHARMACEUTICAL PREPARATIONS.

MANUFACTURERS OF

ACETIC ACID—Very pure, and of fine flavour.

LIQ. AMMON. FORT., 880—Free from unpleasant odour, and of full strength.

GRANULAR CITRATE OF MAGNESIA—In bottles or in 1-cwt. drums.

ORANGE WINE—Of finest flavour and quality, and specially suited for the preparation of Orange Quinine Wine.

WOOD NAPHTHA, CHARCOAL, and all products of the distillation of wood.

SAMPLES AND PRICES ON APPLICATION.

RELIEF FROM COUGH IN TEN MINUTES.

HAYMAN'S BALSAM OF HOREHOUND.

THE SALE IS
INCREASING DAILY.

IT HAS A MOST
PLEASANT TASTE.

The most certain and speedy remedy for Coughs, Colds, Hoarseness, and all disorders of the Chest and Lungs. It has proved itself the most successful preparation ever offered. In the nursery it is invaluable, as the children are fond of it. Immediately it is taken coughing ceases, restlessness is gone, and refreshing sleep ensues. No lady who has once tried it would ever afterwards be without it.

Prepared only by A. HAYMAN, Chemist, NEATH, and sold by all Chemists in London and throughout the Kingdom. Price 1s. 1½d., 2s. 9d., and 4s. 6d. per bottle.

A MOST NOURISHING FOOD AND VALUABLE MEDICINE.

The Lancet—"Of excellent quality, and no taste; of much value in Phthisis and other wasting diseases." *British Medical Journal*—"Children take it well."

British and Colonial Druggist—"The Oil is much above the average, rich in Iodine, and taken by persons of delicate gastric organisation without fear of returning."

Retail, Finest Selected, in Bottles only,

PER

½ Pint, 1/-;

½ Pint, 2/-;

1 Pint,

3/6;

Quart, 6/6.

FOR WEAKNESS.

INDIGESTION,

CONSUMPTION,

Bulk Oil
Prices.

Per
Original Cask,
4/6 per gallon.

In Winchesters,
per doz., at
6/- per gallon.

OF GUARANTEED PURITY.

NON-CONGEALABLE.

Prof. Sir CHAS. CAMERON—"A very pure article, quite free from rancid odour or nauseous flavour."

Sole Consignees
and Bottlers,

HERTZ & COLLINGWOOD, 101 LEADENHALL ST., LONDON.

Silver Medal at Inventions Exhibition 1885.

Established
1798



Howards & Sons

QUININE, CINCHONA ALKALOIDS,

Acetates of Soda & Potash.

Acids, pure.

Æthers, pure & methylated.

Antimony preparations.

Benzoic Acid & Benzoates.

Bicarbonate of Potash.

Bicarbonate of Soda (Howards').

Bismuth preparations.

Borax & Boracic Acid.

Bromides of the Alkalies.

Camphor Bells, Blocks, & Flowers.

Citrate of Iron & Quinine, P.B.

Citric Acid & Citrates.

Cocaine and its Salts.

Corrosive Sublimate.

Ext. Cinch. Liq. P.B., & H. & S.

Ext. Cocæ Liq. P.B.

Hypnone.

Iodides of the Alkalies.

Iodoform, "leve," & cryst.

Liq. Bismuthi et Am. Citratis.

Magnesia.

Mercurials, Calomel, &c., &c.

Morphia Salts.

Rochelle Salt & Pulv. Seidlitz.

Spirit preparations.

Terebene.

Urethane. &c., &c.

AND OTHER PHARMACEUTICAL CHEMICALS.

Stratford, Essex.



Detailed Price Lists on application.

ALOIN,

THE ACTIVE PRINCIPLE OF ALOES,

MANUFACTURED BY THE DISCOVERERS—
T. & H. SMITH & CO., EDINBURGH AND LONDON.

"The uniformity in strength of Aloin, the smallness of its dose, and the certainty of its action, should commend it to the favourable consideration of all medical practitioners."—*Vide Dr. Wm. Craig's investigations respecting our Aloin, published in the Edinburgh Medical Journal for May 1875.*

Edinburgh Address—21 Duke St. London Address—12 Worship St., E.C.

New York Office—20 Cedar Street: FRAS. JAS. MACNAUGHTAN, Agent. [3]

WYLEYS' GELATINE COATED OVAL PILLS.

The only Gelatine Coated Oval Pills of ENGLISH MANUFACTURE in the Market. Special List of REDUCED PRICES on application.

POWDERED DRUGS. All ground in our own Mills, and of Guaranteed Purity.

EXTRACTS (ENGLISH).

CONCENTRATED INFUSIONS AND DECOCTIONS. GRANULAR EFFERVESCENT PREPARATIONS.
GELATINE COATED HORSE BALLS (PATENTED).

Forwarded on application { PRICES CURRENT, LIST OF SPECIALITIES, PILL LIST (GELATINE OR PEARL COATED).

WYLEYS & CO., COVENTRY.

LONDON ADDRESS—1A BURY STREET, ST. MARY AXE, E.C.

Inland Telegrams—"ALSACE LONDON."

Foreign Telegrams—"ALSACE LONDON."

G. VOGT, IMPORTER and EXPORTER

12 LAURENCE POUNTNEY LANE,
CANNON STREET,
LONDON, E.C.

ESSENTIAL OIL OF

Lavender,	Petit Grain,	Cinnamon Leaf,	Bitter Almond,	Lemon,
Spic,	Geranium,	Citronelle,	Patchouli,	Bergamot,
Rosemary,	Aniseed,	Lemongrass,	Otto of Roses,	Orange,
Thyme (red),	Caraway,	Gingergrass,	Sandal Wood,	Vetivert,
Thyme (white),	Cloves, Cassia,	Sassafras,	Mirbane,	Ylang Ylang,
Neroli,	Cedar Wood,	Peppermint,	Eucalyptus,	Bay, Linaloe.

SAMPLES AND PRICES UPON APPLICATION.

HOLMAN LIVER PAD CO.'S REMEDIES.

PRICE LIST.

	Retail	doz.
Holman's Liver and Stomach Pad (regular size)	10/-	135/-
Holman's Liver and Stomach Pad (special size)	10/-	135/-
Holman's Infant Pad (for children's diseases)	7/6	67/6
Holman's Spleen Pad (for inveterate cases)	35/-	315/-
Holman's Kidney Pad (for the kidneys & bladder)	10/-	90/-
Holman's Pectoral Pad (for lung diseases)	15/-	135/-
Holman's Abdominal Pad (for female complaints)	42/-	378/-
Holman's Absorptive Body Plasters	2/6	22/6
Holman's Absorptive Foot Plasters, per pair	2/6	22/6
Absorption Salt (for medicinal baths)	1/-	7/6
Tablets (for constipation)	5/-	45/-

MADE AND PREPARED ONLY BY

**THE HOLMAN LIVER PAD CO.,
NEW YORK, U.S.A.**

Trade supplied by JOHN M. RICHARDS, 46 Holborn Viaduct, London, E.C.

The Original Arnicated

ESTABLISHED
A.D.
1846.

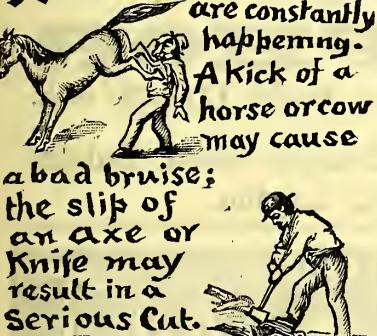
Please
see that
YOUNG'S
goods are
supplied, as there
are many worthless
imitations.

Corn and Bunion Plasters.

HENRY YOUNG, Manufacturer, LONDON.



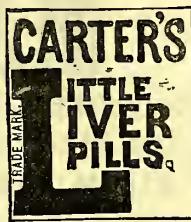

SCALDS and BURNS
 Should have prompt and proper care or they may prove very dangerous and perhaps **FATAL.**

ACCIDENTS are constantly happening. A kick of a horse or cow may cause a bad bruise; the slip of an axe or knife may result in a serious cut.


Any of these things may happen to one of YOUR family at any moment.

Have you a bottle of **PERRY DAVIS' PAIN KILLER** ready for use in such cases? It has no equal for the cure of Scalds, burns, cuts, swellings, bruises, sprains, sores, insect bites &c.

PAIN KILLER
 Is the great Household Medicine, and affords relief not to be obtained by other remedies. Any Chemist can supply it at 1s. 1½d., 2s. 9d., and 4s. 6d. per bottle. British Depot: 46, Holborn Viaduct, London, E.C.



POSITIVE CURE

CARTER'S LITTLE LIVER PILLS are an exceedingly small, purely vegetable, sugar-coated pill, designed to act upon the Liver and Bile in such a manner as to secure all the benefits of a prompt and active medicine, without any of the unpleasant effects, such as purging, nausea, etc., which usually attend the use of ordinary liver remedies. Carter's Little Liver Pill is the Standard Pill of the United States. Established 1856.

CURE

Carter's Little Liver Pills gently stimulate the Liver, and free the stomach from Bile. Other liver pills turn the stomach inside out, purge and weaken the bowels, and leave the patient feeling sick and sore. Carter's Little Liver Pills do not gripe, purge, or nauseate. Other liver pills do all of these.

TORPID

Carter's Little Liver Pills do not constipate the bowels, but are a certain cure for constipation. The effect of all cathartic or purgative pills is to leave the bowels constipated. Carter's Little Liver Pills are given in doses of one or two pills. The dose of other liver pills is from two to five, four to six, and so on.

LIVER.

CARTER'S LITTLE LIVER PILLS also cure all forms of Biliousness, prevent Constipation and Dyspepsia, promote Digestion, relieve distress from too hearty eating, correct Disorders of the Stomach, Stimulate the Liver, and Regulate the Bowels. They do all this by taking just one little pill at a dose. They are purely vegetable, do not gripe or purge, and are as nearly perfect as it is possible for a pill to be. **THEY ARE A SPECIFIC FOR SICK HEADACHE.**

In phials, price 1s. 1½d., of all chemists. British Depot, 46, Holborn Viaduct, London, E.C. Illustrated descriptive pamphlet post free to any address.

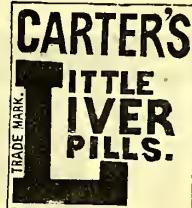
MENDS EVERYTHING.
LEPAGE'S LIQUID GLUE



MENDS EVERYTHING
 Wood, Leather, Paper, Ivory, Glass, China, Furniture, Bric-a-Brac, &c. Strong as Iron. Solid as a Rock. The total quantity sold during the past five years amounted to over 32 MILLION bottles. EVERYBODY WANTS IT. All dealers can sell it. Awarded TWO GOLD MEDALS. London, 1883. New Orleans, 1885. Pronounced Strongest Glue known.

Contains no Acid. ALWAYS READY.—NO HEATING REQUIRED.

Sold in tin cans for Mechanics and Amateurs. Half Pints, 1s. 6d., Pints, 2s. 9d., and Quarts, 4s. 6d. each, and in bottles for family use, at 6d. and 1s. Samples free by post on receipt of stamps or postal order. Sold by the wholesale trade generally, and retailed by Stationers, Fancy Goods Dealers, Grocers, Ironmongers, Chemists, etc., etc. Depot: 46, Holborn Viaduct, London, E.C.



Chemists desiring Show Cards and Printed Matter relating to PERRY DAVIS' PAIN KILLER, SOZODONT, LACTOPEPTINE, POWELL'S EM-BROCATION, HIMROD'S ASTHMA CURE, and other Medicines controlled by me will oblige by making application for same.

JOHN MORGAN RICHARDS.

**GOLD MEDALS—DUBLIN, 1882; BOSTON, 1883;
LONDON (INTERNATIONAL EXHIBITION), 1884.**

SIR JAMES MURRAY'S PURE FLUID MAGNESIA.

The ORIGINAL Article, as prepared by the Inventor, Sir James Murray, M.D.

For over 60 years in use as an excellent remedy in cases of

ACIDITY, INDIGESTION, HEARTBURN, GRAVEL, AND GOUT.

Sold by all respectable Chemists, in LARGE-SIZED Bottles (the 1s. size containing nearly

Double the quantity usually sold at that price), at 1/, 2/6, and 3/6 each.

CAUTION.—Observe that the Signature of the Inventor is on every label.

SIR JAMES MURRAY'S FLUID CAMPHOR

Is a valuable remedy in cases of SLEEPLESSNESS and WEAK NERVES. Bottles, 1/ and 2/ each.

**SIR JAMES MURRAY & SON, Chemical Works, Temple Street, Dublin.
BARCLAY & SONS, 95 Farringdon Street, London.**

DOUGLAS'S "UNIQUE" CONCENTRATED DRY EXTRACT OF MALT POWDER

WHOLESALE AGENTS—

J. W. DRYSDALE & CO.,
4 BURY STREET, LONDON, E.C.

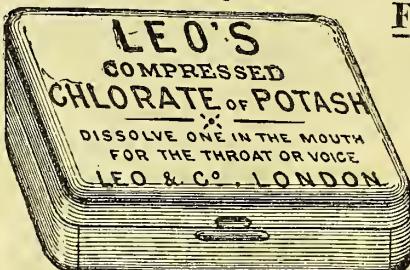
1s. 6d. per Dozen.
Bulk 1s. 6d. per lb.

Price in Bottles (29) 24/- dozen, subject.

Sample bottle free by post 30 stamps.

OF ALL WHOLESALE MEDICINE VENDORS.

For further particulars *vide CHEMIST
AND DRUGGIST*, Oct. 30, pp. 584 & xi.



Further Reduction in Price.

**LEO'S
COMPRESSED**

Chlorate Potash

**Put up in beautiful gilt metal boxes @ 1/6 per doz. net;
also in 1-lb. and 5-lb. bottles @ 1/6 per lb. net.**

SUPPLIED BY ALL WHOLESALE DRUGGISTS. (SPECIFY LEO'S)

A sample dozen boxes will be sent, postage paid, to any Chemist, on receipt
of 1/9 in stamps.

**These afford the largest profit of any cheap Compressed
Goods in the Market.**

LEO & Co., 4, Bury Street, St. Mary Axe, LONDON, E.C.

RESPIRATORS.

These Articles bear a good profit and will pay to push. We have 27 patterns. The neatest and BEST of any in the market. We are actual Makers, and can produce any special kind in any colour at very short notice.

Retail Prices 1/	1/6	2/	2/6	3/	3/6	4/	5/	6/	7/6	10/6
Wholesale, per doz. ... 8/	12/	16/	18/	21/	24/	28/	30/	36/	48/	72/

Counter Cases containing assortments of the leading Patterns, as follows:—

No. 1 CASE.

Two each of Nos. 1, 2, 3, 4.										
One " "	5, 8, 10, 12, 14, 15, 17, 18, 20, 21, 22.									
Producing retail	£4	5	6							
Cost	£2	6	8							
Less 10 per cent.	0	4	8							
				2	2	0				

Showing a PROFIT of £2 3 6

No. 2 CASE.

Six each of Nos. 1, 2, 3, 4.										
Two " "	5, 6, 8, 10, 12, 17, 18, 21, 22.									
One " "	7, 9, 11, 13, 14, 15, 16, 20, 23, 25.									
Producing retail	£10	18	6							
Cost	£5	18	0							
Less 10 per cent.	0	11	10							
				5	6	4				

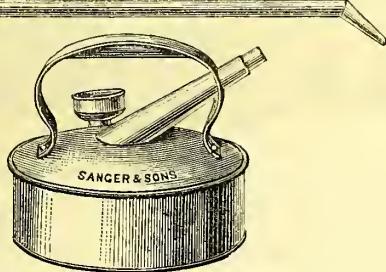
Showing a PROFIT of £5 12 2

With orders amounting to £2 net we will send a Mahogany Glass-top Counter Case, with hinged lid, FREE OF CHARGE; and with orders amounting to £5 net a handsome Mahogany Counter Case (size 22×12×4), with sloping top, hinged back, and sliding tray.

A DESCRIPTIVE LIST WILL BE FORWARDED ON APPLICATION.

**BOURNE, JOHNSON & LATIMER,
WHOLESALE AND EXPORT DRUGGISTS' SUNDRIESMEN,
34 and 35 FURNIVAL STREET, LONDON, E.C.**

Messrs. J. SANGER & SONS beg to call attention to their new BRONCHITIS KETTLE (Block Tin), which they are able to offer at a LOWER PRICE than any yet placed before the Trade. This Kettle having a fixed open funnel can be slowly filled whilst boiling without removal from the fire.



PRICES.

SMALL SIZE,

3½ pints capacity, per doz. 20/-, less 10% & 5% for cash.

MEDIUM SIZE,

5 pints capacity, per doz. 30/-, less 10% & 5% for cash.

LARGE SIZE,

7 pints capacity, per doz. 36/-, less 10% & 5% for cash.

COTTON WOOL.—We hold a large quantity of the above, of good quality, which we beg to offer at the exceptional low price of 7/7 per 7 lbs., subject to 10 per cent. and 5 per cent. at a month.

BEST VIAL AND DISPENSING CORKS.—Samples enclosed free of charge. In three gross bags—

Vial at 8/10, 1/- per gross. Dispensing, 1/1, 1/5,

1/9, subject to our discount, as above. Special quotations for large quantities.

RESPIRATORS.—Handsome got up, each in a glass top box convenient for show on the counter. 7/3, 12/-, 20/-, 28/-, 40/- per dozen, subject to 10 per cent. and 5 per cent. at one month. Extra narrow, suitable for ladies, at the same prices as above.

J. SANGER & SONS, 489 OXFORD STREET, LONDON, W.

1,000 HANDBILLS.

SPECIAL NOTICE.

1,000 HANDBILLS.

HIMROD'S CURE FOR ASTHMA.

We can now supply 1,000 4to Handbills of superior quality, with name and address, and printed on one side only, with order for ½ dozen direct from

J. SANGER & SONS, 489 OXFORD STREET, W.

THOMPSON, MILLARD & CO.

LIMITED,

CURTAIN ROAD, LONDON, E.C.

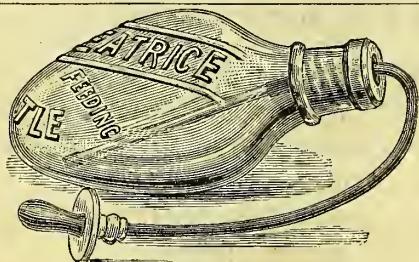
Telegraphic Address, "BEATROP LONDON."

**WHOLESALE and EXPORT**

**DRUGGISTS' SUNDRIESMEN, DRUGGISTS,
SURGICAL INSTRUMENT MAKERS, PERFUMERS, ETC.**

Sole Proprietors of the "Mater," "Bristol," "Imperial,"

**"BEATRICE" & "TROPICAL"
FEEDING BOTTLES.**



THE "BEATRICE" FEEDING BOTTLE.

With opal glass screw stopper, best black rubber fittings, each in handsome shouldered box arranged to stand the feeder in while filling, and tube and bottle brush, per dozen 8s., subject to usual discount. This Feeder combines the advantages of the straight and bent neck bottles, can be laid on either side without leakage, and is easily cleaned.



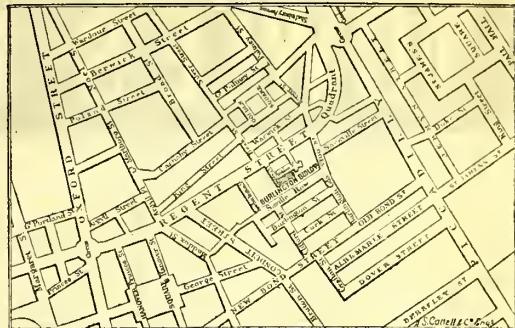
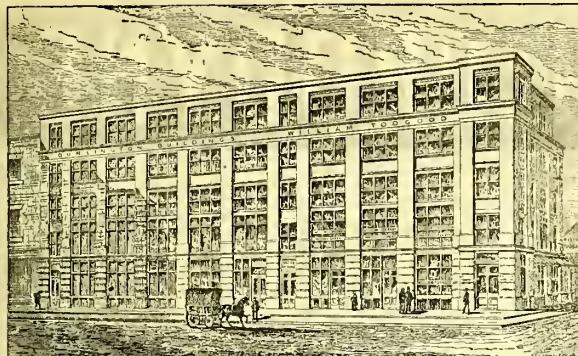
THE "TROPICAL" FEEDING BOTTLE.

THOMPSON, MILLARD & Co.'s new PATENTED Boat-shape Feeding Bottle. Fitted with screw glass stopper or metal screw cap at end to allow of cleaning. In two sizes. Illustrated Price List on Application.

WRITE FOR PRICE LIST OF CHEAP FEEDING BOTTLES, JUST ISSUED.

Special attention paid to Export Orders, and Illustrated Price Lists posted free to any part of the world on application.

Our goods give universal satisfaction, and buyers may with confidence favour us with a Trial Order.



WILLIAM TOOGOOD'S NEW PREMISES.

**WILLIAM TOOGOOD,
WHOLESALE AND EXPORT
GLASS BOTTLE MANUFACTURER
AND
DRUGGISTS' SUNDRYMAN,
HAS REMOVED FROM
35, 36 & 37 MOUNT STREET, GROSVENOR SQUARE, W.,
TO
BURLINGTON BUILDINGS,
HEDDON STREET, REGENT STREET, LONDON, W.**

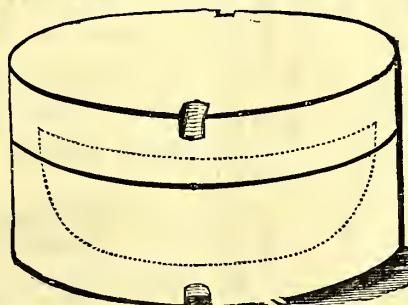
TOOGOOD'S IMPROVED PATENT

EARTHENWARE COVERED POTS

Are claimed to be the most perfect and convenient yet offered to the Trade, and possess the following Advantages:—

1st.—An India-rubber Band passed vertically over the pot is kept in its place by the notches, and effectually secures the lid; for travelling this supplies a want greatly needed.

2nd.—The Covers being made quite flat, labels can be affixed with ease, and without creasing.



3rd.—The inside of the Pots being rounded or egg-shape, the contents can be entirely removed without waste.

4th.—Great attention has been paid to insure accuracy of contents.

PRICES, per gross.

$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{3}{4}$	1	$1\frac{1}{2}$ oz.
18/-	18/-	18/-	20/-	22/-	24/-
2	3	4	6	8 oz.	
27/-	34/-	42/-	54/-	66/-	

AUSTRALIAN AGENCY AND SAMPLE ROOM:

Mr. A. I. JOSEPH, Bond Street, Sydney.

Telegraphic Address: "TOOGOOD LONDON."

Telephone No. 3834.

William Toogood's Price Current of Glass Bottles, Measures, Earthenware, Druggists' Sundries, &c., will be forwarded post free upon application.

SPECIAL ATTENTION GIVEN TO SHIPPING ORDERS.

REVISED PRICE LIST.

	Retail. Per Doz. £ s. d.	Per Doz. £ s. d.
Towle's Chlorodyne	... ...	... 1 1½
Ditto	(3 fluid oz.)	2 9
Ditto	(8 "	6 16
Lid. Chlorodyn (original and only genuine) 1 lb.	... ...	4 16
Ditto	ditto	11 0
Ditto	ditto	4 13
Winchester Quarts (6 lb.) 7/6 per lb., bottles free.	... ...	1 10 0
Towle's Antibilious Pills	... ...	2 14 0
Ditto	... ...	4 16 0
Towle's Chlorodyne Lozenges	... ...	0 8 6
Ditto Jujubes }	... ...	2 9 0
Ditto in bulk, bottles free, containing 1 lb., 2½ each.	... ...	1 3 0
Ditto ditto 1 lb. 10oz., 4/6	... ...	0 5 3
Ditto ditto 4lb., 10/-	... ...	0 8 6
N.B.—The Commissioners of Inland Revenue in requiring the Proprietors to stamp these Lozenges and Jujubes, before sending them out, will allow them to be sold by the retailers without further duty, providing they are simply wrapped in paper, and not enclosed in a box, bottle, or packet.		
Thornton's Celebrated Toilet Cream	... ...	1 0 9 0
Ditto	... ...	1 6 0
Amboline (Registered Trade Mark)	... ...	1 4 0
The Thornton (Pied) Lotion (Stamp'd)	... ...	1 4 0
Thornton's Paragon Hair Wash	... ...	1 4 0
Ditto	... ...	0 9 0
		2 6 1 4 0

POSTERS, BILLS, AND SHOWCARDS ON APPLICATION.

£5 worth (assorted or otherwise) Carriage Paid.
7lb. Lozenges and upwards stamped with Chemists' own name,
free of charge.

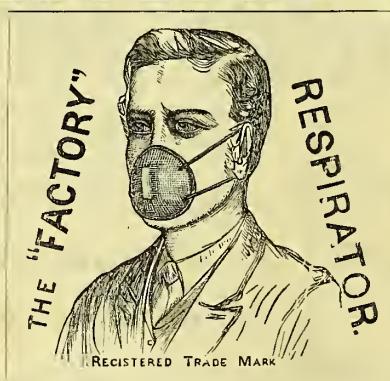
A. P. TOWLE & SON

75 BACK PICCADILLY,
MANCHESTER, December, 1886.

OBTAINED OF ALL PATENT MEDICINE AND WHOLESALE
DRUG HOUSES.

Asbestos Works, Bedding Makers,
Dyers, Felt Makers, and
File Cutters.

FRAZER & GREEN'S FACTORY RESPIRATOR.



These are used for preventing the inhalation of poisonous and irritating dust, so common in many workshops, and so injurious to the health of the workpeople. Especially indicated in those workshops where the use of respirators is compulsory.

Testimonials from Factory Inspectors and Manufacturers on application.

AGENTS WANTED.

127 BUCHANAN STREET, GLASGOW.

TRADE MARK.

PURE WOOL FAT.
CHOLESTERINE FAT.
(OLEUM LANÆ.)
Free from Odour. Free from Water.

The pure oil of sheep's wool is used as a penetrating oil, taking the place of lard and vaseline from its well-known softening properties, and, as it never becomes rancid, will keep indefinitely in any climate. It is valuable as a soothing remedy for

BURNS, WOUNDS, SPRAINS, and all SKIN DISEASES.

FOR VETERINARY USE.—It cannot be surpassed for Harness Galls, Flesh Wounds, Scratches, Sand Cracks, Cracked Teats, Mange, Ringbone, and Contraction of Muscles.

Any powder (like sulphur), chemical (carbolic acid or saltpetre), oil, tincture, or essence can be incorporated with it. Over its own weight of water can be added to it and still make a smooth, firm ointment.

Sample pounds sent by mail on receipt of 3s.

THEODORE METCALF & CO.,
39 Tremont Street, BOSTON, MASS., U.S.A.

NEW YORK AGENCY—
E. FOUGERA & CO., 30 North William St., New York, U.S.A.

Brown

TELEGRAPHIC ADDRESS—"CRAWSHAW LONDON."

Violet

Magenta

Puce

Crimson

Blue

Mauve

Maroon

Purple

Lavender

Orange

Cardinal

Slate

Yellow

Green

Ponceau

80 Fann St., Aldersgate St., London, E.C.,
E. CRAWSHAW & CO. January 1st, 1887.

We beg respectfully to intimate to our numerous friends, and the Trade generally, that from this date we are ready to receive orders for our New Dye—

BLACK FOR WOOL,

which we venture to think will supply a long-felt want, and is certain to become the most popular of all our colours. This Dye will produce a most beautiful Blue Black on all kinds of Woollen Goods, but is not suitable for Silk or Cotton. The Black for Wool will be packed uniform in size and price with our various other Dyes, viz., 1d., 2d., 3d., 6d., and 1s.

Wishing you all a very happy and prosperous New Year, We are, yours respectfully,

E. CRAWSHAW & CO.

Scarlet

Pink

Clare.

Cerise

Rose

Canary

Grey

Olive Green

Old Gold

Dark Brown

Navy Blue

Dark Blue

Dark Green

Black Reviver

Black for Wool

&c., &c.

SILVER MEDAL
I.H.E. 1884.THE ONLY
MEDAL AWARDED
FOR THIS
SPECIALTY.

CHLORIDE OF LIME
IN AIRTIGHT WATERPROOF TRADE MARK & ODOURLESS PACKAGES
INVENTORS AND MANUFACTURERS NATIONAL CHEMICAL CO., LONDON
THE N. C. CO. PACKAGES HAVE STOOD THE TEST FOR MANY YEARS, AND CAN
ALWAYS BE RELIED UPON TO GIVE SATISFACTION.
KEPT IN STOCK BY ALL WHOLESALE DRUGGISTS & C. SEE THEIR PRICE LISTS &c.

SILVER MEDAL
I.H.E. 1884.BEWARE
OF OTHER SO
CALLED AIRTIGHT
PACKAGES

INVARIABLE FOR THE SICK ROOM.
THE SANITARY DISINFECTING COVER
(GREENBURY'S PATENT),
For Stop Pails, Commodes, &c.
REDUCES PRICES.

This cover has a chamber which can be filled with Condyl's Fluid or other Disinfectant. By pressing the ball in handle a spray is injected sufficient to disinfect or deodorise the contents. Sizes—7", 8", 8½", 9", 9½", 10", 10½", 11", 11½", 12", 12½", 13", 13½", 14", 14½", 15", 15½", 16", 16½", 17", 17½", 18", 18½", 19", 19½", 20", 20½", 21", 21½", 22", 22½", 23", 23½", 24", 24½", 25", 25½", 26", 26½", 27", 27½", 28", 28½", 29", 29½", 30", 30½", 31", 31½", 32", 32½", 33", 33½", 34", 34½", 35", 35½", 36", 36½", 37", 37½", 38", 38½", 39", 39½", 40", 40½", 41", 41½", 42", 42½", 43", 43½", 44", 44½", 45", 45½", 46", 46½", 47", 47½", 48", 48½", 49", 49½", 50", 50½", 51", 51½", 52", 52½", 53", 53½", 54", 54½", 55", 55½", 56", 56½", 57", 57½", 58", 58½", 59", 59½", 60", 60½", 61", 61½", 62", 62½", 63", 63½", 64", 64½", 65", 65½", 66", 66½", 67", 67½", 68", 68½", 69", 69½", 70", 70½", 71", 71½", 72", 72½", 73", 73½", 74", 74½", 75", 75½", 76", 76½", 77", 77½", 78", 78½", 79", 79½", 80", 80½", 81", 81½", 82", 82½", 83", 83½", 84", 84½", 85", 85½", 86", 86½", 87", 87½", 88", 88½", 89", 89½", 90", 90½", 91", 91½", 92", 92½", 93", 93½", 94", 94½", 95", 95½", 96", 96½", 97", 97½", 98", 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PREPARED CONCENTRATED CALIFORNIAN BORAX

BORAX EXTRACT OF SOAP, BORAX DRY SOAP, ETC.

CAUTION.—BEWARE OF FRAUD.

"The Patent Borax Company have had to suppress three flagrant imitations of their specialties, . . . As all labels and titles possessed by this Company are registered in every possible manner for protection, it is surprising that other firms should endeavour to imitate their manufactures, although, of course, successful articles always induce inferior imitations. The Company intend to prosecute all future imitators."—*The Grocer*, June 18, 1881.

"PROPRIETARY ARTICLES."

"We repeat once more, that the principle of all the decisions we know of, laid down again and again by judges, and only modified in its application to the circumstances of each case, is that no man has a right to turn to his own profit the reputation or property which another man has created. Thus in *Grimm v. another* the Court decided the defendant from selling under the name of American Tamar a preparation resembling Tamar Indien, though put up in an altogether different form from that of the latter article. The ground of this decision was that there could have been no object in using the word Tamar at all except to trade on the reputation in the name which the plaintiff had made. On a similar ground Mr. Eno obtained an injunction against a grocer restraining the latter from using the words fruit salt, fruit saline, fruit powder, or any similar combination of words."

"Quite recently the Hop Bitters Company have obtained an injunction against certain chemists, for using a label with the title, 'Hop Tonic Bitters,' the word Tonic being judiciously small. The Hop Bitters Company have spent at the rate of twenty thousand pounds per annum in advertising their article, and they have thereby created a substantial property. Mr. Henry George himself would not dispute their right to protection in such property; indeed it is the one kind of property which he would recognise. Everyone else has a perfect right to make a bitter medicine, but the new article should win its reputation under its own distinctive title."—From *The Chemist and Druggist*, June 19, 1886.

In these actions the plaintiffs obtained the endorsements in Court of their legal rights, while the defendants were justly punished for laying their hands upon and attempting to appropriate the property of others.

There was a time when the title to commercial property of this class—however costly the building up—was difficult to prove and almost impossible to uphold;—thanks to clearer commercial views and respect for trading rights in our Law Courts, the title deeds to proprietary articles are now clearly defined and indisputable.

Price List free on application. Borax Book, "Home and Health and Beauty," 66 Illustrations, containing Discovery, &c., published at 3d.; reduced price to the Trade for distribution. Sample copy free.

In directing attention to these remarks, and for the guidance of dealers in proprietary articles, we wish to point out that

"PREPARED CONCENTRATED CALIFORNIAN BORAX" was unknown until manufactured and introduced to the public by Mr. Arthur Robottom at the end of 1874. Since that date over twenty-six thousand pounds have been expended in popularizing the demand, which has now tempted some persons to put up fraudulent compounds in packets, or imitations they hope cannot be called fraudulent, but are still sufficiently near in the wording and style of the packet to deceive the public.

"Patent Borax Preparations have been the means of bringing a new, respectable, and profitable trade to grocers."—*The Grocer*, Sept. 12, 1885.

Dealers having doubts on the subject, and wishing to avoid legal damages, can easily settle the matter for themselves by asking if they ever saw Prepared Concentrated Californian Borax, or any Patent Borax Preparation in packets, with uses and directions, offered for sale before the Patent Borax Company had created this new and important trade for dealers in household requisites, and established the value of these articles by a very heavy money expenditure.

The reply can only take one form, and that to confirm our statement; and we here give public notice that we are determined to protect our rights by strict legal means against all infringements. At the same time we wish to point out to Shopkeepers and others, that by offering imitations they become equally liable with the fraudulent makers.

The profitable and safe course is to refuse all imitations, leave the frauds on the hands of those who offer them, and purchase only from the Discoverers, Proprietors, and sole Manufacturers,

The Patent Borax Company,
Patent Borax Works,
NEW MARKET ST., BIRMINGHAM.

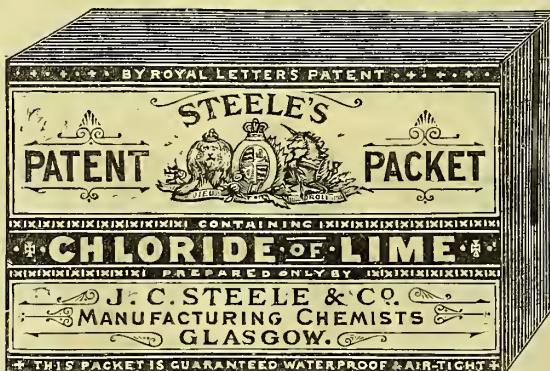


STEELE'S PATENT PACKETS CONTAINING CHLORIDE OF LIME

Packed in uniform-sized Boxes at the following prices:—

12 doz. 1 d. size	8/-
8 " $\frac{1}{4}$ -lb. "	8/-
4 " $\frac{1}{2}$ -lb. "	7/6
2 " 1-lb. "	7/-
Assorted Boxes, containing 8 1-lb., 12 $\frac{1}{2}$ -lb., 16 $\frac{1}{4}$ -lb., 32 1d. size,	7/9.

Above Prices are subject to usual Wholesale discounts.



Our Packets are air-tight, waterproof, neat, and clean, with full directions for Disinfecting and Bleaching purposes, containing Lime of best quality and full Chlorine strength.

FOR EXPORT they are specially suitable, and we can with confidence recommend them.

Samples on application.

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MANUFACTURING CHEMISTS,
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GLASGOW. | 42 CHEAPSIDE,
LONDON. | Telegraphic Address—
"CHLORIDE GLASGOW."

SHIRLEY'S MENTHOL CONES A.1. BRAND

Style 1	1.—6d. Glass Bottles, with metal screw caps. 12 in a hinged box.	per doz. 3/3
	1b.—6d. Turquoise Blue Jars, with metal screw caps. 12 in a box.	3/4

Style 2	In ordering, state distinctly A 1 Brand.	
	2.—6d. Plain Willow Boxes, lid serving as a holder. 12 in a hinged box.	3/ per doz.

Style 3	Special terms to large buyers.	
	3.—9d. Glass Bottles, with metal screw caps. 6 in a box.	5/ per doz.

Style 4	Cones fitted to buyers' own boxes.	
	4.—1s. Glass Bottles, with metal screw caps (Menthol on wood mount serving as a holder). 6 in a box, or on a card.	6/3 per doz.

Style 5	5.—1s. Glass Bottles, with metal screw caps (bullet-shaped Cones, wrapped in tinfoil). 6 in a box, or on a card.	6/3 per doz.
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Styles 7, 8, and 9 can be had with labels transferred direct on to the box in ink.

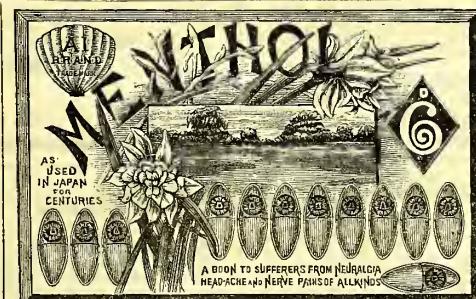
Style 12.—6d. Polished American Birch, "pull off" lid shape as No. 6. 12 in a box, 3 3 per dozen.

IMPORTANT.—Before buying elsewhere write for New Price List, just issued, post free on application.

Style 13.—1s. Vegetable Ivory, acorn shape. 12 in glass outer, 6 6 per dozen; loose, 6 3 per dozen.



Style 10.—6d. Menthol, in oblong willow cases, with red labels. 12 on a card, very saleable. 3 6 per dozen.



Style 19.—Pocket Menthol. The cases are made of boxwood, in the shape of an egg, screwing in the middle, and arranged on an attractive show-card, with easel back. 3/ per dozen.

MENTHOL is the PANACEA for all PAIN, therefore RECOMMEND IT.

Sell pure, unadulterated articles, and you are sure to give satisfaction to your customers. Therefore, stock no Menthol but SHIRLEY'S A 1 Brand, purest, best, and most effective.

INCREASE YOUR PROFITS BY
SELLING MENTHOL
SHOW CASE GRATIS.

Order as A 1 BRAND from your Wholesale House, or direct from
A. W. SHIRLEY (J. G. Shirley), 30 PATERNOSTER SQ., LONDON, E.C.
Telegraphic Address—"MENTHOL LONDON."

There is a lot of inferior Menthol about, so Beware of Cheap Brands.

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57 GREAT RUSSELL STREET, LONDON

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Will forward his New 64-page Pamphlet, entitled "PAINLESS AND PERFECT DENTISTRY," which contains a List of the Diplomas, Gold and Silver Medals, and other Awards obtained at the Great International Exhibitions, to any part of the world, gratis and post free. Agents Wanted.

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VAN ABBOTT'S GLUTEN BREAD,

And all other suitable Foods for Diabetic Patients.

Dietary Tables and Price Lists post free on application.

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S.V.R. (RECTIFIED PURE SPIRIT)

Export and Home Trade. Finest quality at lowest possible prices. Samples free anywhere.

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ELASTIC GUM SURGICAL INSTRUMENTS.

WORKS, LAMBETH.

ESTABLISHED 1830.

**Critchley's
Starch Gloss**

Makes Starched Linen like new. Does not stick to spider-like Materials. Once tried always wanted. Used in the Royal Laundries. Sold everywhere, in Packets, 1d., 3d., 6d., and 1s. each. Write for quotations.

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THE PERFECT SURGICAL BANDAGE.

Preferred to all Makes hitherto used.

In Cases of Twelve Six-yard Rolls, 2 inches wide, 3s. 9d.; 2½ inches, 4s. 6d.; 3 inches, 5s. 6d.; or, Case containing twelve Six-yard Rolls of each width, 15s.

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BALSAMS.

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Chemicals, Drugs, and Oils at lowest market rates.

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PETROLEUM JELLY,

EQUAL TO AND CHEAPER THAN VASELINE.
SANITARY FLUID AND SHEEP DIP,
THE CHEAPEST AND BEST DISINFECTANT,
GREASE, PITCH, ASPHALTE, AND ALL PRODUCTS OF TAR AND ROSIN.
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A. S. LLOYD'S EUXESIS,

For SHAVING without SOAP, WATER or BRUSH,
And in one half the ordinary time.

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Prepared from the finest
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without any foreign whatever.

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Wholesale and Shipping terms on application.

BROMIDIUM

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NEW HYPNOTIC.

One Bottle 4/6 | One Dozen 40/-

One Gross, 10 per cent. discount.

FOR SALE BY ALL WHOLESALE AND EXPORT DRUGGISTS.

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ORANGE WINE

(VIN. AURANT., P.B.)

Specially brewed for Quinine Wine, does not deposit. Is well adapted for Export, as it will keep good in any climate. In casks 13, 27, 56, 112, 140 gallons; small casks 3s. 9d. per gall., carriage allowed. In wine bottles (not less than 3 doz.), at 9s. per doz., including bottles. Cases extra and returnable.

Sample six stamps. Special quotations to large buyers.

GEO. DURRANT & CO., Hertford.

"SPÉCIALITÉ" LIME JUICE

(NO MUSTY FLAVOUR).

For Sample and Terms

FELTOE & SONS,
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Can be obtained through the Wholesale Houses.

Hunyadi János

CAUTION.—Circumstances which have come to the knowledge of Andreas Saxlehner, Buda Pest, Sole Proprietor of the Hunyadi János Spring, compel him to warn the British Public against SPURIOUS IMITATIONS. To secure genuineness, purchasers should see that every bottle has on the LABEL the name of "THE APOLLINARIS COMPANY (LIMITED), London."

BY ROYAL LETTERS PATENT.

HASSALL & CO.'S PHOSPHO-CITRIC ACID

To supersede Citric & Tartaric for Aerated Waters. It is recommended by the most eminent Physicians in Great Britain.

THE BEST HOUSES IN THE TRADE HAVE ALREADY ADOPTED IT.

It is thoroughly beneficial, and far better suited to the requirements of the Mineral Water Trade; it is free from lead and all other minerals and cheap acids; it is fully £8 per cwt. cheaper than Citric Acid, which mostly contains lead.

WE COMPETE ON QUALITY AND PRICE.

Testimonial from Mr. A. J. MASON, Chemist, of Bexley Heath.

"Having gone carefully into the matter I have no hesitation in saying that the patentees have in no way overstated the merits of their acid. There is no doubt in my mind that Phospho-citric Acid produces a much higher class beverage—giving, as they say, 'greater body'—the one thing needful in this class of goods; also its fruity character and mellowness I have never been able to secure with the ordinary acids. The aroma is also more pronounced. 'Purity' was my great incentive to giving the acid a trial, but I found 50s. or 60s. (citric at 1s. 7d. per lb.) per cwt. an economy not often secured under such favourable circumstances."

Why pay 2s. 6d. per lb. for Citric, when a purer and more efficient Acid can be bought at about $\frac{1}{3}$ the price?

Beware of Imitations.

Write for Pamphlet and Testimonials. 3-oz. Sample will be sent on receipt of Postage (3 Stamps), or 14 lbs. on approbation.

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SOLE AGENTS for ROCHE'S HERBAL EMBROCATION,

Burchell's Anodyne Necklaces, Ford's Balsam of Horehound, Widow Welch's Pills, by Mrs. Smithers, Oxley's Essence Ginger, and the preparations of Messrs. Hudson & Son, late of the Haymarket, London.

PRICE LISTS SENT ON APPLICATION. ORDERS CAREFULLY AND PROMPTLY EXECUTED.

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Mechanical Engineers, privileged in France and Abroad,

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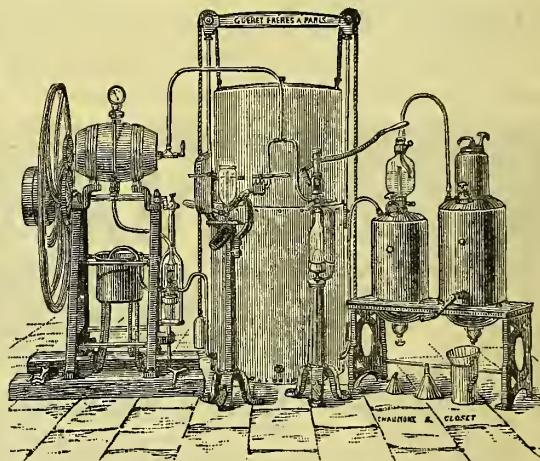
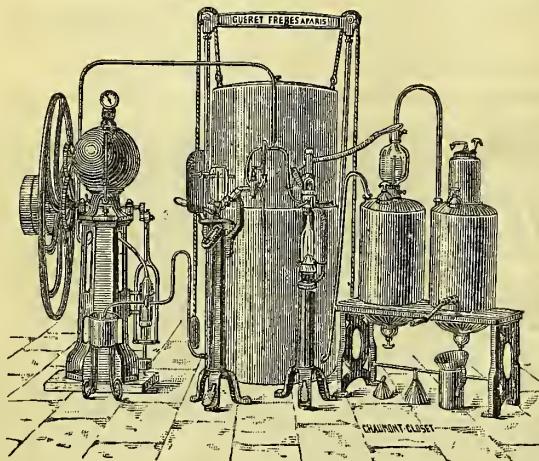
GOLD MEDAL, AMSTERDAM, 1883.

PLANT & SYPHONS FOR THE MANUFACTURE OF AÉRATED BEVERAGES,

WITH ALL THE LATEST IMPROVEMENTS.

COMPLETE CONTINUOUS APPARATUS, SPHERICAL OR PEAR-SHAPED.

The Saturator is of brass, guaranteed free from every defect in construction and perfect in action, tested at high pressure, combining economy with the greatest sanitary security, and enjoying an unrivalled reputation.



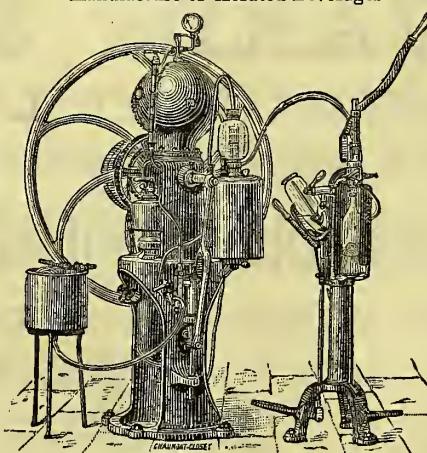
SYPHONS

With small levers, fittings of metal of highest quality, and best glass.



CONTINUOUS APPARATUS

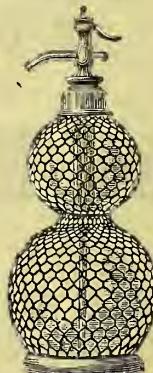
For the automatic generation of carbonic acid gas, the only practical system applicable to the manufacture of Aérate Beverages



GAZOSELTZ

For the instantaneous production of Aérate Beverages at table.

Any one can use them.



FULL PARTICULARS AND GENERAL CATALOGUE SENT ON APPLICATION.

TO AERATED WATER MANUFACTURERS.

HAY'S

SOLUBLE + ESSENCES

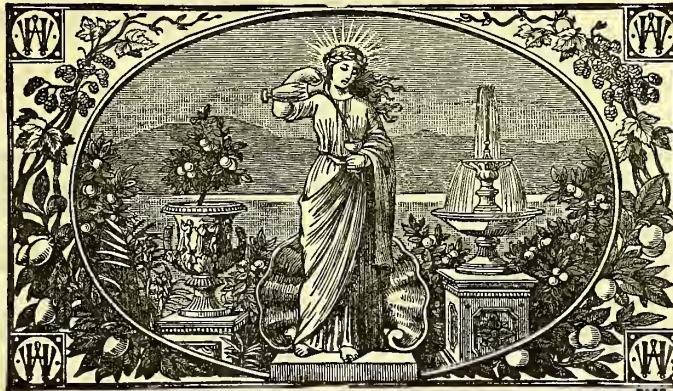
ARE GUARANTEED TO BE THE FINEST IN THE MARKET.

HONOURABLE MENTION:

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GOLD MEDAL:
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The difference between preparations made from Hay's Essences and those made from the numerous spurious imitations of them bearing the name of Soluble Essences, is most marked, and no manufacturer using the latter can compete with one using Hay's Preparations, as is universally known.



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A Pure Essence of the Finest Ginger, perfectly free from Capsicum. Highly adapted for the manufacture of Transparent Aerated Waters, and for all Dietetic, Medicinal, and Pharmaceutical purposes. Trade Price, 5s. per lb.; 12 lbs. and upwards, 4s. 6d.

HAY'S COMPOUND FORTIFIED ESSENCE OF JAMAICA GINGER. FOR FIRST QUALITY GINGER ALE.

Specially prepared for the manufacture of the very Finest Ginger Ale made, is an addition of Vanilla, Lemon, and other flavours to the above. It imparts, with the exquisite Ginger Aroma of the above-mentioned Essence, a peculiarly fine fruity flavour, combined with the fullest amount of fragrance and pungency. Trade Price, 5s. 6d. per lb.; 12 lbs. and upwards, 5s. Quantity required, five fluid ozs. to each gallon of Syrup, making 103 10-oz. Bottles.

HAY'S GINGER ALE EXTRACT. FOR SECOND QUALITY GINGER ALE.

This Extract is strongly recommended for the manufacture of Ginger Ale, to which it imparts Pungency, Colouring, great Brilliancy, and an unusually Fine Ginger Flavour and Aroma, and makes a thoroughly good article. Trade Price, 4s. 6d. per lb., 12 lbs. and upwards, 4s. Quantity required, three fluid ozs. to each gallon of Syrup, making 106 10-oz. Bottles.

HAY'S GINGER ALE ESSENCE. Highly Concentrated. FOR THIRD QUALITY GINGER ALE.

This Essence, which is a complete Bouquet of Flavours in a highly concentrated state, makes a Ginger Ale possessing an amount of aroma, flavour and quality that will be sure to command a large sale, and that is unsurpassed by the so-called Finest Belfast Ginger Ale. Trade Price, 9s. per lb.; 12 lbs. and upwards, 8s. 6d. Quantity required, half a fluid oz. to each gallon of Syrup, making 106 10-oz. Bottles. This Essence will be most valuable to the general trade.

HAY'S GINGER CHAMPAGNE ESSENCE.

For the manufacture of Ginger Champagne. This Essence is a combination of the finest flavours, and imparts with the Ginger a most exquisite aroma, making a most delicious and refreshing approximation to Champagne. Trade Price, 8s. per lb.; 12 lbs. and upwards, 7s. 6d. Quantity required, ten fluid ozs. to each gallon of Syrup, making 106 10-oz. Bottles.

HAY'S SOLUBLE ESSENCE OF MESSINA LEMONS.

A magnificent Preparation, perfectly soluble, and makes the finest Lemonade obtainable. Trade Price, 8s. 6d. per lb.; 12 lbs. and upwards, 8s. "Added in the proportion of one fluid oz. to each gallon of Syrup, the Soluble Essence imparts the most delicious flavour of the Lemon."—*The Chemist's Journal.*

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Perfectly soluble. Trade Price, 5s. per lb.; 12 lbs. and upwards, 4s. 6d. Quantity required, one and a half fluid oz. to each gallon of Syrup, making 106 10-oz. bottles.

HAY'S HOP ALE ESSENCE.

This Essence is made from the Choicest Hops grown, and is unrivalled for its peculiarly fine Hop flavour and aroma. Hop Ale made from this Essence has the full flavour of the finest Hops, and is a really appetising Bitter Beer. Trade price, 8s. 6d. per lb.; 12 lbs. and upwards, 8s. Quantity required, two fluid ozs. to each gallon of Syrup, making 106 10-oz. bottles.

**W. HAY, MANUFACTURING CHEMIST,
BEVERLEY ROAD, HULL, ENGLAND.**

Indentors, to prevent disappointment, should specify that the Goods are to be of HAY'S MANUFACTURE.

W. HAY CAUTIONS THE TRADE against the use of those spurious so-called SOLUBLE ESSENCES which, besides having NO GINGER AROMA, are FLAVOURLESS, RANK, and DISAGREEABLE, and are little more than TINCTURES OF CAPSICUM



LETCHERS' Permanent! CONCENTRATED UNIFORM! ECONOMICAL! LIQUORS.

Any Quantity of a required Syrup at a moment's notice.

In Daily Use in Pharmacies and Dispensaries throughout the World.

May be obtained through any Wholesale Drug or Patent Medicine House.

When Ordering, please Specify "LETCHERS."

LIQUOR Ferri Iodidi.

EACH fluid drachm contains 34.4 grains of Iodide of Iron.

*ONE volume added to seven volumes of *Syrupus, B.P.*, forms Syr. Ferri Iodidi of full *Pharmacopœia* strength.*

Liquor Ferri et Quiniaæ et Strychniæ Phosph.

EACH fluid drachm contains 4 grains of Phosphate of Iron, 4 grains of Phosphate of Quinia, and $\frac{1}{2}$ grain of Strychnia.

*ONE volume added to three volumes of *Syrupus, B.P.*, forms Easton's Syrup.*

LIQUOR Calcis Lactophosph.

EACH fluid drachm contains 8 grains of anhydrous Calcium Phosphate combined with Lactic Acid.

*ONE volume added to seven volumes of *Syrupus, B.P.*, forms Syr. Calcis Lactophosph.*

*Fletcher, Fletcher, & Stevenson,
North London Chemical Works, Holloway, London, N.*

LIQUOR Ferri Phosph.

EACH fluid drachm contains 8 grains of Ferrous Phosphate.

*ONE volume added to seven volumes of *Syrupus, B.P.*, forms Syr. Ferri Phosph.*

LIQUOR Ferri Phosph. Comp.

EACH fluid drachm contains, in addition to the alkaline Phosphates, 4 grains of Phosphate of Iron, and 8 grains of Phosphate of Calcium, dissolved in pure Phosphoric Acid.

*ONE volume added to three volumes of *Syrupus, B.P.*, forms "Chemical Food."*

LIQUOR Ferri Hypophosph.

EACH fluid drachm contains 8 grains of Hypophosphate of Iron.

*ONE volume added to seven volumes of *Syrupus, B.P.*, forms Syr. Ferri Hypophosph.*



LYNCH'S NEW



REGISTERED FUNNELS.



Registered No. 41098.

PRICES.

Nos.	1	2	3	4	5	6	7	8	9
Capacity	1 oz.	2 oz.	4 oz.	8 oz.	1 pt.	1½ pt.	2 pt.	2½ pt.	3½ pt.
Per dozen.....	7/-	8/-	11/-	16/-	24/-	30/-	40/-	48/-	60/-

LESS USUAL DISCOUNT.

In bringing to the notice of the Trade our New Registered Funnels, we cannot do better than subjoin a Testimonial to their increased practical efficiency, given, after careful test, by Mr. Charles Umney (Messrs. Wright, Layman & Umney), and feel sure that any addition on our part to his testimony would be superfluous.

TESTIMONIAL.

MESSRS. LYNCH & CO., ALDERSGATE ST.

50 SOUTHWARK STREET, LONDON, S.E.,

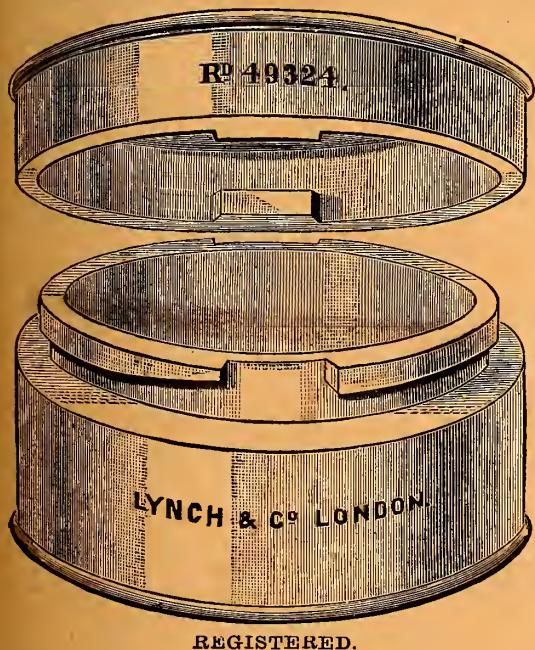
11th January, 1886.

Dear Sirs.—My assistants have tried, in my firm's laboratory, your new Funnel, and filtration is 25 per cent. faster through it than through the old form of funnel.

Faithfully yours,

(Signed)

CHAS. UMNEY.



LYNCH'S NEW LOCK-LID COVERED POTS.

These Pots obviate an admitted defect in all those hitherto used for Cold Cream, Bears' Grease, Ointments, &c., &c. They are made in nine sizes, at prices subjoined, and their great superiority for the use of persons travelling will commend them for general adoption.

Size	1 & 2 drm.	½ oz.	¾ oz.	1 oz.
Per gross...	21/-	22/-	23/6	25/-

Size	1½ oz.	2 oz.	3 oz.	4 oz.	6 oz.
Per gross...	28/-	31/6	39/-	45/-	60/-

LESS USUAL DISCOUNT.

SOLE MANUFACTURERS :

LYNCH & CO.,

ALDERSGATE STREET, LONDON; & 48 QUEEN STREET, MELBOURNE.

THE ONLY TASTELESS APERIENT. HUNGARIAN NATURAL MINERAL WATER.



The Salts of AESCULAP contain
90 per cent. of purgatives.

HIGHEST AWARD
AT THE
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SAMPLE BOTTLE MAY BE HAD FROM THE COMPANY'S OFFICE.

The AESCULAP BITTER WATER COMPANY, Ltd., 38 Snow Hill, London, E.C., & Buda Pesth.

Wholesale Agents: INGRAM & ROYLE, London, Liverpool, and Bristol. [2]

CADBURY'S COCOA ESSENCE

you get it when asked for, as imitations are often pushed for the sake of extra profit.

"We have carefully examined the samples brought under our notice, and find that they are genuine, and that the Essence of Cocoa is just what it is declared to be by Messrs. Cadbury Brothers."—*Lancet*.

"Cocoa treated thus will, we expect, prove to be one of the most nutritious, digestible, and restorative of drinks."—*British Medical Journal*.

GUARANTEED PURE AND SOLUBLE.

The medical profession order Cadbury's
Cocoa Essence in thousands of cases, as
the most wholesome beverage. Be sure

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MAKERS OF

Granular Effervescing Salts. Citrate Iron and Quinine. Ammonia Citrate Iron.

PEPSIN. EXPRESSED JUICES.

Umney's Fluid Extract
Cinchona Bark.
Essential Oil Almonds,
Freed from Prussic Acid.

LAYMAN

Green Extracts.
Fluid Extracts.
Preparations of British
Pharmacopœia, 1885.

MANUFACTURING PHARMACEUTICAL CHEMISTS.

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NORWEGIAN COD LIVER OIL, Finest
Non-Congealing (Season 1886).

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